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The New England Surgical Society

SPIRAL ACCESSORY PARALYSIS FOLLOWING NECK DISSECTIONS.

By FRANK H. LAHEY, M.D., BOSTON,
AND
H. M. CLUTE, M.D., BOSTON.

WHILE the distribution of the spinal accessory nerves and the muscles supplied by them are universally known, it is our opinion that the functional incapacities resulting from interference with the conductivity of that nerve, either by cutting or scarring, have not been sufficiently demonstrated and stressed. Hence the seriousness of these functional disturbances is not customarily given due weight when operations are contemplated that make injury to this nerve a possibility.

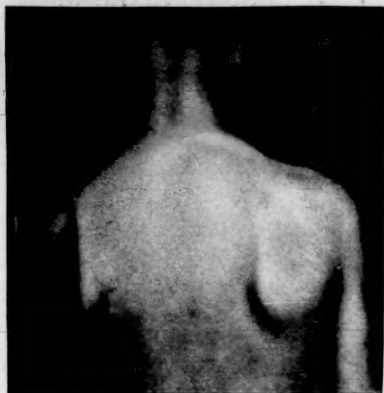
In reviewing the ultimate results of neck dissections for tuberculosis of the cervical lymph-nodes, at the Boston City Hospital and in our own private practice, for a communication to be published later, we have been impressed with the number of cases in which the injury has occurred and with the seriousness of the resultant deformity.

Letters were sent to 132 operated cases; it was possible, however, to communicate in person with but 46 of these cases. In this number, spinal accessory paralysis occurred in 12 cases, or 26.08 per cent.

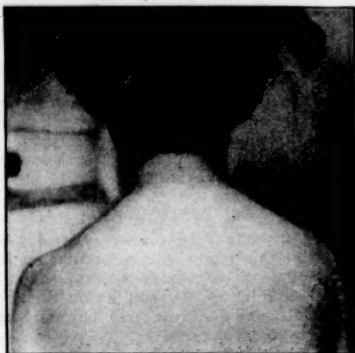
We believe that it will be of manifest value to demonstrate on the screen several examples of the typical deformity which follows injury to the spinal accessory nerve, together with the anatomy of this nerve, in order to show the mechanism of the deformity and also to draw a few conclusions as the result of this study.

As is shown by the photographs of individuals with this lesion, the deformity, as far as visual appearance goes, consists of a lengthening and sagging of the shoulder on the affected side, a flattening of the area normally represented by the trapezius, particularly noticeable in the front and back views of the individual, due to the loss of the contour line made between the shoulder-tip and the nape of the neck by the superior edge of the trapezius. At times there is a deepening of the supraclavicular fossa, and in very thin persons the superior angle of the scapula may be seen to ride up out of its normal location so that it may even be observed to project, beneath the skin, beyond the contour line just mentioned, between the shoulder and the head.

The loss of function is most marked by the inability of the individual to abduct the arm with any degree of power beyond a right angle, and by the inability to elevate the shoulders. The anatomical explanation of these functional limitations is based principally on the fact that the powerful trapezius is the main factor in holding the scapula toward the vertebral line when the large deltoid and less powerful



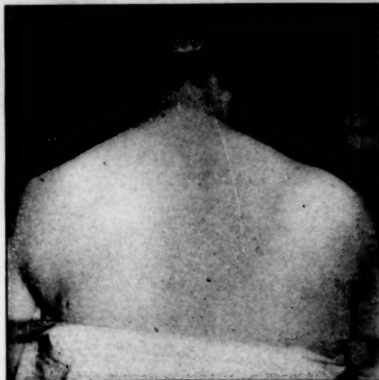
CASE I.—LEFT SPINAL ACCESSORY PARALYSIS.
Note the sagging left shoulder, the loss of the shoulder contour line, and that the left scapula sags away from the vertebral line as compared with the normal right scapula.



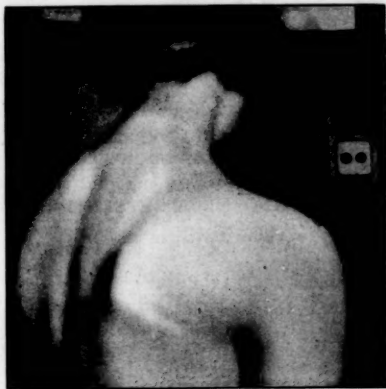
CASE II.—LEFT SPINAL ACCESSORY PARALYSIS.
Similar to Case I, except that the scapula is not visualized.

supraspinatus, whose origins are almost entirely on the scapula, come into action when heavy objects grasped in the hands are being raised above the level of the shoulder. The trapezius, with its broad base arising at the midline and its apex inserted into the external apex of the scapula, is admirably adapted to be the anchor muscle, so to speak, in powerful efforts to elevate objects with the arms. It must be recalled that the upper fibres of the trapezius draw the point of the shoulder upward and the fibres of the middle and lower third draw the scapula toward the midline and so rotate it as also to raise the point of the shoulder.

It is to be recalled also that after the deltoid has completed its action and has raised the arm through about 90 degrees, further eleva-



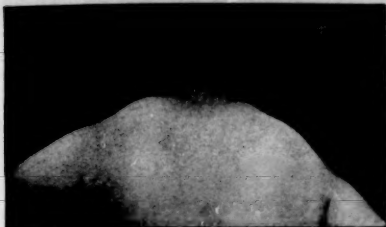
CASE III.—RIGHT SPINAL ACCESSORY PARALYSIS.
No. 1. Abduction of right arm beyond ninety degrees is impossible.



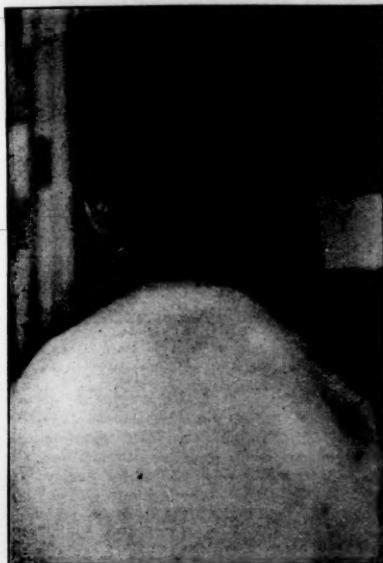
No. 2. Side view of same patient. Note again in this case the sagged and rotated scapula, together with the flattened shoulder, as compared with the normal left shoulder.



CASE IV.—RIGHT SPINAL ACCESSORY PARALYSIS.



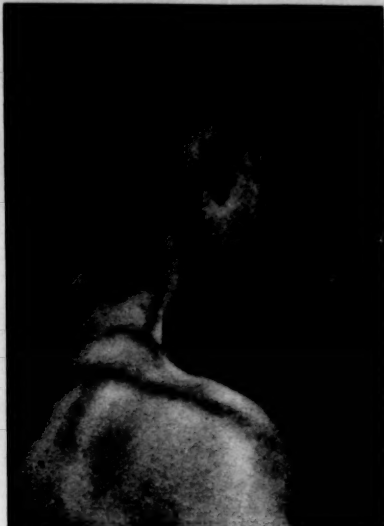
CASE V.—RIGHT SPINAL ACCESSORY PARALYSIS.
Right arm abducted to greatest possible degree. Note the limited degree of abduction as compared with normal left arm, although left arm has been abducted only incompletely.



CASE VI.—BILATERAL SPINAL ACCESSORY PARALYSIS.
No. 1. Note the sagging of both shoulders, and on the left the superior angle of the scapula projecting above the contour line, as mentioned in the text.



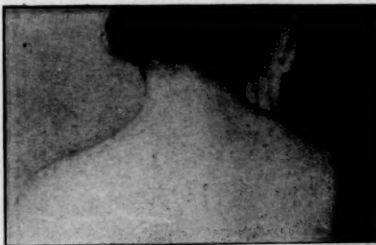
No. 2. Note in the front view the deepened supraclavicular fossae and prominent clavicles.



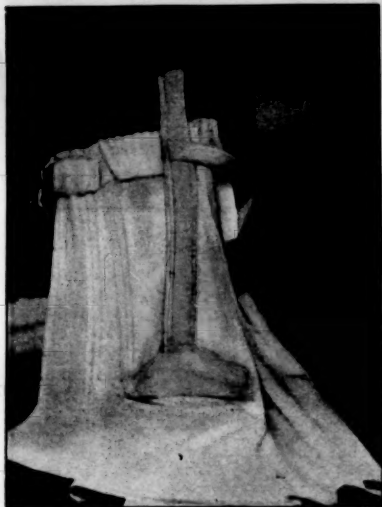
No. 3. Note in this view, as in Case I, the scapula sagging well away from the mid-line, due to loss of trapezius support. Note again the prominent superior angle of the scapula.



No. 4. Patient endeavoring to accomplish the greatest possible degree of abduction. Note the powerful deltoids in contraction, yet barely 90 degrees of abduction can be accomplished.



CASE VII.—LEFT SPINAL ACCESSORY PARALYSIS.
No. 1. Because of the unfortunate background, the faint outline of the left shoulder has been exaggerated by pencil mark. This woman suffered marked discomfort, as many of the cases do, soon after the injury, so that she had difficulty in continuing to earn her livelihood.



No. 2. Apparatus attached to corset, to hold shoulder up and take strain off levator anguli scapulae and rhomboid muscles.



No. 3. Same applied, showing its position under arm held up by nurse.



No. 4. Showing shoulder supported by brace. Compare with photograph No. 1 of Case VII.

tion through another right angle is accomplished by a rotation of the scapula resulting from the action of the serratus magnus and the trapezius. With those anatomical facts in mind, the explanation of the major part of the loss of function is at once evident.

When one recalls also that after trapezius paralysis the greater and lesser rhomboids, both relatively light muscles, are the sole structures (excluding the levator anguli scapulae) that fix the scapula toward the midline against the weight of lifted objects and the combined powerful efforts of the deltoid and supraspinatus, it is not difficult to understand why the shoulder sags and abduction beyond a right angle is impossible.

Since in this survey we are interested principally in the spinal accessory injuries as they occur in connection with neck dissections, and not in those rare spinal accessory injuries high in the neck or accompanying fractures of the base, mention will be made only of the anatomy of the spinal accessory as it is met with in the anatomy of neck dissections. By means of the accompanying illustrations of dissections of the spinal accessory nerve made under our direction in the anatomical laboratory at Tufts College Medical School, the course and relations of the spinal accessory nerve, together

**ANATOMICAL PLATE No. 1.**

A semi-diagrammatic illustration made from a dissection of the trapezius and shoulder girdle muscles. Note how the trapezius with its broadly attached base acts as an anchor muscle between the powerful shoulder girdle muscles here, showing deltoid, sub-

scapularis and teres muscles, all of which find their entire origin, excepting a few fibres of the deltoid arising on the clavicle, on the scapula and are inserted into the humerus.

This plate demonstrates why with trapezius paralysis the shoulder sags and the scapula moves outward.



ANATOMICAL PLATE No. 2.

A semi-diagrammatic illustration made from a dissection of the spinal accessory and the second, third and fourth cervical nerves. Note the junction of the second cervical, with the spinal accessory nerve to form the sterno-mastoid plexus. Note, also, from their

location how possible it is to injure not only the spinal accessory but also the second, third and fourth cervical in dissections about the great vessels.

In this illustration the spinal accessory is pulled somewhat upward by the turned-up sterno-mastoid muscle.

with the second, third, and fourth cervical nerves, can be visualized very readily. Note in Anatomical Plate No. II the junction of the second cervical nerve with the spinal accessory beneath the sterno-mastoid to form the sterno-mastoid plexus. Note in Anatomical Plate No. III the anastomosis between the third and fourth cervical nerves in the spinal accessory beneath the trapezius to form the subtrapezius plexus. It is this anastomosis or plexus which is depended upon to provide innervation to the trapezius when the trunk of the spinal accessory is cut.

As the result of this study, it must be admitted that following extensive dissections for the tubercular glands of the neck, spinal accessory paralysis is quite apt to occur, and that it is a lesion so interfering with function of the arm and shoulder-girdle as to be of serious consequence.

It must be admitted that in this series of cases, either that the third and fourth cervical nerves failed separately to assume the function of the spinal accessory, or that they were also destroyed in the course of the dissection.

Furthermore, inasmuch as some of these cases were our own private cases, in which

both our records and certain recollections (from our particular interest in this subject) have indicated that the spinal accessory was carefully preserved throughout its course, it must also be admitted that the conductivity of the nerve may be impaired permanently by the trauma consequent to its dissection.

The report in the literature of two cases of this paralysis occurring, one ten and the other fourteen years after dissections, makes the avoidance of this deformity all the more uncertain.*

Consequently, as the result of our personal experience, we believe that in spite of the reports that there will be sufficient innervation through the third and fourth cervical nerves, the sacrifice of the spinal accessory is unsound surgery, since there are apparently cases in which these nerves do not innervate the trapezius and one has no way of ascertaining this fact before operation.

Based upon our study of this series of cases, we believe that the spinal accessory nerve is probably quite susceptible to the effects of trauma, and that its regenerative capacity fol-

* Bruce, A. Ninian, M.D., D.Sc.: Review of Neurology and Psychiatry, Edinburgh, Vol. XIII, 1915, p. 51.



ANATOMICAL PLATE No. 3.

A semi-diagrammatic illustration made from a dissection of the spinal accessory throughout its course beneath the trapezius. The trapezius has been turned back with its base left attached at the mid-line. Note the junction of the third and fourth cervical nerves with the spinal accessory to form the subtrapezius plexus. It is these two cervical nerves which are depended upon to maintain function when the spinal accessory trunk is cut higher up. Absence of this junction is often noted by anatomists, and in

this series, as stated in the text, either must have existed or the third and fourth cervical nerves have been interrupted, together with the spinal accessory nerve.

Note in the illustration beneath the turned-up trapezius, the greater and lesser rhomboids, the sole muscle, excepting the levator anguli scapulae, holding the scapula toward the mid-line. It is the over-stretching of these muscles which doubtless produces the shoulder ache immediately following the injury, and passing away later when these structures are stretched out and paralyzed.

lowing trauma is quite limited, particularly when this regeneration must occur while the nerve is still located in a field that is to be the site of considerable scar tissue formation.

With these facts in mind, we believe that stimulation of the nerve to produce contraction of the trapezius, thereby identifying the spinal accessory nerve, should never be accomplished by pinching the nerve either with forceps or hemostats, no matter how lightly it be done. We have now provided for this purpose a battery with electrodes which may be sterilized. Anyone who has made use of the pernicious and really senseless procedure of pinching the nerve, whether the spinal accessory in neck dissections or the long thoracic and subscapular in axillary dissections (and we admit to having done it), cannot fail to recall that after one or two light nips, conductivity was interrupted and the muscle no longer contracted. Therefore in our opinion the nerve should be handled with the greatest gentleness and care.

CONCLUSIONS.

In undertaking neck operations for lesions not necessarily fatal, we believe that the loss of function secondary to spinal accessory paralysis must always be considered of serious consequence, limiting power and motion as it does; and of possible occurrence, first, because there are instances in which it is practically impossible to preserve the nerve and remove the diseased foci, and second, because interruption in conductivity may follow even when the nerve has been preserved.

It is our conviction that if one is to undertake neck dissections of the type spoken of above, he should familiarize himself thoroughly with the course and relations of the spinal accessory and second, third, fourth, and fifth cervical nerves, and take meticulous pains for their preservation.

DISCUSSION OF DR. LAHEY'S PAPER ON SPINAL ACCESSORY PARALYSIS.

DR. A. M. ROWLEY, Hartford, Conn.: Dr. Lahey has very interestingly and instructively presented the subject in his paper. I did not know that there were so many cases that could be gotten together and tabulated as he has shown today.

It is unusual to see cases of this paralysis, and it is surprising, with the number that he has shown, that there are not more traumatic cases. In the future, the nerves will be saved because blunt dissections of the neck are not as common as they used to be, due to the correction of focal infections in the mouth, tonsils and teeth.

One thing Dr. Lahey did not speak about in the child, was the tendency to develop a lateral curvature of the spine, together with the drooping of the shoulder, occasioned by the paralysis of this nerve.

DR. ROBERT B. GREENOUGH, Boston: I think Dr.

Lahey is to be congratulated upon the clearness and completeness of his treatment of this important subject. In fact, little can be added in discussion.

I would call attention, however, to the fact that neck dissections are performed for a number of different lesions. When the disease is one which does not demand complete removal, as in tuberculosis, anatomical consideration, such as preservation of the spinal accessory, must be considered as far more important than when the dissection is performed for carcinoma and the success of the operation depends entirely upon the complete removal of the disease. In such cases anatomical consideration must take a second place and the effort must be made to remove the disease completely, if such a possibility exists.

My own experience in neck dissections has had to do more especially with operations for cancer, and I may say that I have been impressed with the fact that a most extensive removal of the structures in the neck produces relatively little disturbance of function, even when the spinal accessory and all of the superficial cervical nerves were sacrificed.

DR. CHARLES A. POSTER: Although I am surprised at the number of cases which Dr. Lahey has gathered, I believe it a more common injury than was thought, for surgeons have had in mind, the sterno-mastoid paralysis, and not the resulting lesion to the trapezius muscle. We should be grateful to Dr. Lahey, for calling attention to the bad results, of the division of the eleventh nerve.

DR. JAMES S. STONE, Boston: I should like to say that in the cases of tuberculosis which we do at the Children's Hospital we invariably find that glands completely surround the spinal accessory nerve in its first portion.

DR. H. M. CLUTE, Boston: That a marked deformity and serious disability may follow a careful dissection of the neck is obvious from the pictures you have seen. Even in cases in which the spinal accessory itself is carefully preserved, a certain degree of muscle weakness has at times resulted. Doubtless this may be accounted for by the normal variations in the anastomoses between the second, third, and fourth cervical nerves and the spinal accessories, which result in a varying degree of function for the accessory nerve.

Tuberculous glands of the neck most often demand dissections in the region of the spinal accessory, and the question at once arises as to what cases require surgical interference. Certainly, we should operate with the most positive indications and only when we feel that no other method of treatment may be substituted for surgery.

We hope to show in a later paper that x-ray should be more frequently used in these cases, more particularly in those associated with draining sinuses. A partial removal of a mass of tuberculous gland with careful preservation of the spinal accessory nerve, and later, x-ray treatment, is preferable to a radical primary removal. Glands which have broken down and formed an abscess should be incised and curetted, and later treated with x-ray and tuberculin. Glands discrete and not caseating may, of course, be excised with care of the nerve. We believe that in a neck dissection the spinal accessory nerve should be picked up and preserved just as carefully as the ureter in a radical hysterectomy, or the facial nerve in the excision of a parotid tumor.

In a few cases of trapezius paralysis, we have tried the use of a brace. In one case we felt that we had benefited the patient. This brace, acting from the axilla, to lift the shoulder, was worn for

several months. When this patient was last seen, the disability in the shoulder was much improved and the deformity much less evident, although the brace had not then been worn for some weeks. In addition to the brace, we employed massage.

Though we do not feel that tuberculous glands should never be dissected, we are convinced that such cases should only be done with the most careful regard for the nerve supply of the muscles of the neck, and that the spinal accessory nerve should always be preserved.

DR. FRANK H. LAHEY, Boston: There is very little to add. It is obvious that in cases of cancer of the neck one disregards the spinal accessory, and this paper is aimed at "bloc" dissections of tuberculous glands. As Dr. Clute has said, these dissections of the glands are not worth while. Better results can be accomplished with the x-ray and with the treatment of the locally broken down glands. Incidentally, I believe there is a feeling that incision of softened glands is a safe thing, and that you don't get the spinal accessory nerve in this procedure. In this series there have been cases where the spinal accessory has been cut, not in "bloc" dissection but in cervical abscesses, where the visiting surgeon thought it was perfectly safe to turn the case over to a house officer, but the patient got a shoulder drop just from incision. Therefore, you should have the location of this nerve in mind just the same when abscesses are incised and glands poked into for drainage.

RECURRENT RENAL CALCULI.

By J. DELLINGER BARNEY, M.D., F.A.C.S., BOSTON,
*Chief, Genito-Urinary Department, Massachusetts
General Hospital.*

DURING the past twenty years, thanks chiefly to the x-ray, the diagnosis of renal calculus has been brought to a point of extraordinary accuracy. One does not have to go back many years to recall the operations for a supposed stone in the kidney, where frequently a perfectly innocent organ was opened, needled and thoroughly mauled, there being no stone found, and the symptoms due to disease of the pancreas, gall-bladder, appendix or some other organ.

But in spite of the great strides which have been made, the situation today presents many pitfalls, both in diagnosis and treatment. I have been studying the problem of renal calculus intensively for the past year with a view not only to focusing greater attention on the question, but also in an endeavor to find ways and means of improving what is really a serious situation. Although it seems a simple matter not only to detect in, but also to remove from a small cavity like the renal pelvis a comparatively small stone, my investigations have shown that the contrary is not infrequent.

Before proceeding to a discussion of the details of diagnosis and of treatment it may be well to review a few of the more important points presented by patients suffering with renal calculi. For this purpose I have analyzed some cases in which stone was proved

occurring in the Genito-Urinary Department at the Massachusetts General Hospital. There are 139 of these cases. That the male shows a greater predisposition for stone than the female is shown by the fact that whereas there were 108 men in the series, there were only 31 women. The exceedingly low mortality of the disease, a point which will be discussed later at greater length, may be accounted for partly by the fact that most individuals who come to operation are in the prime of life. Only eleven of our patients were past 50 years of age, while the majority were between 21 and 30 years old. One might almost say that renal stones are uncommon during childhood and old age.

It is well known, in fact, the surgeons of an older day proved by their fruitless efforts to locate a kidney stone, that many other intra-abdominal conditions will often so simulate those produced by a renal calculus, that the best of us may occasionally err, even though every opportunity is at hand to make an accurate differential diagnosis. In a previous study of a series of 200 cases of kidney stone, the writer pointed out that "53, or 18%, had had one or more previous operations, mostly (36) on the appendix, but including almost every other abdominal organ as well."

In many of these cases no use whatever was made of available and well-known diagnostic measures, but the surgeon placed too great a value on what he could see or feel. Certain cases of right-sided renal calculi, with high temperature, pain, tenderness, distention, nausea, and vomiting, and accompanied not only by a negative x-ray, but a normal urine as well, may easily confuse the most careful and conscientious physician. We may well forgive the surgeon, who with this picture before him, perhaps in the middle of the night, and fearing the grave consequences of a gangrenous appendix, gives the patient the benefit of the doubt and operates in the belief that he is forestalling a general peritonitis. The patient would indeed be ungrateful who would not hold the surgeon guiltless under such circumstances. This applies, however, only to the acute cases. When it comes to the more chronic conditions, with symptoms which have persisted off and on for years, I believe there should be little or no reason for operating on the appendix or some other organ when a renal stone is the real offender.

To return once more to our cases, one is at once impressed not only by the mildness, but also by the long duration of the symptoms presented by many patients. Four cases had had symptoms for less than a week, nine had had symptoms for two months, eighteen for six months, and eight for one year. But in thirty-nine cases there had been symptoms for three years, while in eleven the duration was five years, in fourteen for ten years, and seventeen cases dated the onset of the disease to an even more remote period.

In other words, renal stone may be most insidious, and as we all know, may acquire enormous size with practically no symptoms at all. In connection with this remark, I wish to speak of a case I operated upon about a year ago. The patient was a young, healthy man, recently discharged from the Army, who was not only accepted by his draft board, but also saw exceedingly active service in France. A few months before I saw him, and for the first time, he began to have a slight aching sensation in the left loin. Other than this there were no symptoms whatever. The urine was slightly hazy, and abdominal examination revealed a non-tender, freely movable, stony hard mass in the region of the left kidney. X-ray showed this to be a calculus of enormous size, and nephrectomy was done.

In general, however, it may be said that the smaller the stone, the more frequent and the more severe will be the symptoms to which it gives rise. The production of pain in the region of the kidney is perhaps the most common result of renal stone, but it is by no means uncommon to have this symptom in other parts of the body. It is also worth remembering that a stone in one kidney may produce pain in the opposite kidney, and I have seen two or three cases lately with this phenomenon. On the other hand, the first indication of a stone in the urinary tract may come from other directions, such as hematuria, dysuria, chills and fever, pyuria, frequent urination, and even retention of urine.

Among the items of physical examination it is worth while to state that in only sixty of our cases (about 43%) was there any tenderness in or in the region of the stone-bearing kidney at the time of examination. As might be expected, pus was the most frequent element in the urinary sediment, it being found alone fifty-nine times and combined with blood forty-one times. The fact that is more important, however, is that in 26 cases, blood alone was found in the sediment, while in twelve cases, or 8.6%, the urine was persistently negative. This substantiates the observations of Cabot, who in 150 cases reported a persistently normal urine in 14%, and also bears out the statement of Braasch, who found the urine normal in 12% of 294 cases of ureteral stone.

It has already been pointed out that the x-ray is largely responsible for our present-day acumen in the matter of diagnosis of stone. Ordinary clinical methods of observation are by themselves of little value, and but little help from a diagnostic viewpoint is to be gained in many cases from the cystoscope and ureteral catheter.

A positive x-ray was recorded in 125 cases, but one must remember that the roentgenogram will fail to show stones in from 6 to 11% of cases. To illustrate this point, let me briefly recite one instance. The patient was a man of

thirty-five who had been seen off and on in the Out-Patient Department for about two years, with intermittent attacks of right-sided pain and other symptoms, both subjective and objective, of right renal calculus. Repeated x-ray showed nothing to indicate stone, and several pyelograms revealed what we considered a normal pelvis. I finally operated upon this man, and found a flat stone about the size and shape of half a clam shell in the pelvis of the right kidney. The chemist reported that the composition of this calculus was chiefly uric acid, which might well account for its invisibility. On the other hand, it is hard to account for the fact that after its removal from the kidney, repeated efforts to conceal it from the x-ray by various devices were entirely unsuccessful.

In the examination of the x-ray film one must remember that superimposed stones may, and frequently do, give but one shadow, so that on this evidence alone no man can be sure of the exact number of stones present. I consider the recognition of this point of very great importance.

It has already been remarked that cystoscopy and catheterization of the ureter may alone be of little diagnostic value in renal calculus. At the same time it is a procedure which is essential in most instances. It will tell us whether the patient has two kidneys, a bit of information which is often indispensable and often unobtainable in any other way; it gives correct information as to the presence or absence of infection in either kidney; it determines the patency of the ureter; and, finally, it enables us not only to ascertain the separate function of each kidney, but it also enables the roentgenologist to ascertain, by the relation of a suspicious shadow to an opaque catheter, whether that shadow is within or outside of the renal pelvis or ureter. Furthermore, a pyelogram can be made by means of the ureter catheter, and this procedure will show the amount of dilatation of the kidney pelvis. It may be worth while, also, to say that the x-ray apparatus and the roentgenologist which and who can successfully determine the condition of a bone, for example, can by no means always obtain good results in the matter of kidney plates. Furthermore, the proper interpretation of the plate is frequently quite as essential as the technique of taking it, for it often happens that the experienced roentgenologist will locate a shadow which he who is less familiar with his art would overlook; on the other hand, there are many shadows which resemble urinary calculi to the inexperienced eye, whereas the practiced observer will at once pronounce them to be phleboliths, calcified mesenteric glands, calcified costal cartilages or extraneous fecal material.

The bilaterality of renal calculi is not infrequent. Such was the situation in 6.4% of the cases in this series, and the figures of other students of this problem are as high or higher.

At the same time, bilateral stones do not, by any means, imply a bilaterality of the symptoms.

In twenty-four of our cases the only stone, or one of several, was passed spontaneously, generally after cystoscopic examination with catheterization of the ureter. We must conclude from this that even this gentle manipulation is often all that is necessary to bring about the conditions favorable to the passage of calculi.

Where the stone was not spontaneously passed, operation was performed. Pyelotomy was the operation of choice, and was done in sixty-four instances. In thirteen others, it was combined with nephrotomy, generally partial. There were thirty-nine nephrectomies and seventeen nephrotomies, of which three were bilateral. In general, it may be said that pyelotomy is sufficient for the removal of small calculi, even though they may be multiple. Nephrotomy is necessary only when the stone is of such a size or shape as to make its extraction through the renal pelvis impossible. Nephrectomy should be reserved only for the cases wherein the kidney is badly infected, dilated, and harboring generally a very large stone or many small ones.

Our post-operative complications were variable in character and cause. Some were unavoidable; others might be ascribed to faulty judgment or technique. The list includes exacerbation of severe preëxisting infection requiring nephrectomy and post-operative hemorrhage after nephrotomy.

In view of the fact that the cases were all of the hospital class, our mortality of 3.5%, comprising five cases, is not discouraging. Two of these deaths were due to pneumonia, one to uremia, one to hemorrhage after nephrotomy, and one to gas-oxygen anaesthesia.

In five, abnormalities were found consisting of horseshoe kidney in three, and an aberrant artery with the ureter kinked over it in two. None of these abnormalities was discovered before operation, but it is worth while to record them as a reminder that one should always be on the alert for the unusual when doing kidney surgery.

Let us now turn to the results of operation for renal calculus. It is not an inspiring study, for the number of patients undergoing operation in whom subsequent examination shows the presence of one or more calculi, is appalling. It is doubtless true that the conditions which produce stone and which we do not understand are still active, but it is also true that the operation (or should I say the operator?), be it a pyelotomy or nephrotomy, does not remove all the stones in a very large number of cases. That this statement is not exaggerated is shown by the fact that out of 20 of our cases in which an x-ray was taken during convalescence, nine, or 45%, showed stones still remaining in the kidney. I recite these facts in the belief not only that they are no worse than those of other clinics, but also

that their publication may incite others to investigate and improve their own results, even as we are trying to improve ours. It is unfortunate, indeed, that the literature contains so few references to the end-results of renal calculi. The only articles of value are those of Cabot and Crabtree and of Braasch. The former observers have published a report of unique value, in that the cases were studied personally by the two men, the examination including roentgenograms and urinalysis. The statement of the patient, and in many instances that of the family physician, was taken only at its face value, for, as has been already pointed out, the absence of both subjective and objective symptoms is so common that without x-ray no definite conclusion can be drawn. In 51% of cases undergoing pyelotomy, stones were found to be present in the kidney at a subsequent time. I believe that many of these stones were those which had been overlooked at the time of operation, but there is no doubt, also, that the actual recurrences were numerous. This is a point which cannot be settled, however, for few, if any, of these cases had had an x-ray during convalescence, and if my study of this problem has impressed anything at all upon me, it is that this procedure is of vital importance if we are to know the facts. A positive x-ray, taken six months or a year later, cannot distinguish between a "left over" and a true recurrence.

Braasch reports more favorable end-results from the Mayo Clinic, namely, a recurrence of only 14.7% in 88 patients. But inasmuch as he does not state the particular kind of operation which was performed in these cases and does not state whether the patients were x-rayed and examined by himself or by some equally competent observer, one hesitates to accept these figures without further explanation.

While I have not attempted to look up the end-results of this series of 139 cases intensively, I have found that among the pyelotomies there is known "recurrence" of 32.8%. The same criticism applies to this figure, however, as to that of Cabot and Crabtree, for the reason that post-operative x-rays were taken in but a few instances.

If pyelotomy results so badly, one might suppose that nephrotomy, an operation which fully exposes the interior of the kidney to the eye and to the finger, would yield more gratifying results. Unfortunately, such is not the case. In the article by Cabot and Crabtree, already referred to, these writers found a recurrence of 56% after this operation, an even higher figure than that after pyelotomy. In the 139 cases here reported stones were subsequently found in the kidney in 30.3% after nephrotomy. It seems to me, therefore, that we are facing a serious problem, serious because of the fact that we apparently cure so few patients, and even more serious because a subsequent operation may be, and often is, necessary, and

every surgeon knows that a second operation on a kidney may be an undertaking of the first magnitude, endangering not only the kidney, but even the patient.

Sufficient has already been said about the comparative safety of the operation of pyelotomy. Let us now turn to nephrotomy and see what it has to offer. There have been seventy nephrotomies at the Massachusetts General Hospital from 1897 to date. The patients varied in age from 11 to 64 years. There was an operative mortality of 5.7%, comprising four cases, of which two died as a result of secondary nephrectomy for hemorrhage, and one died from streptococcus septicaemia. The cause of death in the fourth case was not stated. Secondary hemorrhage, requiring nephrectomy in three instances, occurred in eleven, or 15.7%. In seven the bleeding ceased spontaneously, and the patients recovered; in one the wound was successfully packed. The recurrent or overlooked stones in these seventy cases were found to be 52.9%, a figure which compares closely with that of Cabot and Crabtree. This fact, together with the ever-present danger of post-operative hemorrhage, should leave no doubt in anyone's mind that the operation is not always productive of success. The writer knows of no more difficult decision to make than that which involves interference with hemorrhage in a nephrectomized kidney. It is a situation which calls for the best surgical skill.

In cases of massive hemorrhage, with all the well-known symptoms, one has no doubt as to the necessity of interference to save life. In cases of less severe hemorrhage, one's surgical judgment is sorely tried. One hesitates to pack a kidney or to remove it, unless it is absolutely necessary; on the other hand, he who hesitates may find himself operating at the eleventh hour and in frantic haste, on an exsanguinated patient, often with lethal results.

After reviewing the situation, whether from the point of view of pyelotomy or of nephrotomy, one may well ask why it is that the removal of stones from so comparatively small a cavity as the renal pelvis is not always possible. There are many reasons. In the first place, the renal pelvis is a very complex cavity with various ramifications in the form of calyces from its main portion. These calyces may, and often do, branch off at right or acute angles from the plane of the pelvis itself, so that their very existence is not demonstrable. On the other hand, a probe may fail to find the orifice of a calyx, either because of its minute size or on account of its location. In either event, the stone within is undetected. In the second place, one sees a very definite shadow of what is apparently one stone in the kidney. He explores the pelvis, finds and removes one stone which resembles the x-ray shadow both in size and shape, and which shows no facets or evidence of fracture, and

fails to explore the pelvis for other stones which may be there. Thirdly, the manipulation required to remove one stone, even though gently performed with a blunt instrument, generally causes more or less hemorrhage from the pelvic mucosa. The blood clots around any other stone present, and the layer of fibrin so deposited, effectively prevents its detection by a metal instrument. Fourthly, it occasionally happens that the stone or stones may slip unobserved into a dilated ureter, or even into the perirenal tissues during the operation.

These are the chief causes for overlooking stones in a kidney, and I believe the shadows of these stones are regarded as actual recurrences far too frequently. On the other hand, there is no doubt that stones do actually recur, for reasons which are as yet obscure. As an instance of this, I may say that I have a patient, a man of about 65, who has been passing stones from both kidneys for 28 years. X-ray will show a shadow first in one kidney, then in the other.

The question now arises, what can be done to improve this unfortunate situation? In the first place, careful and accurate preoperative study is absolutely essential. One should never jump at conclusions. The most definite stone shadow may be a calcified gland or a gallstone, even though the urine contains pus and blood. Not only must the exact location of the stone in the kidney be determined, but every effort should be made to find out whether there is more than one stone. An x-ray should be taken as close as possible to the time of operation, preferably the same day, the reason being that a stone may travel back and forth between the renal pelvis and the lower end of the ureter without producing symptoms. It is awkward to operate for a stone in the kidney when the stone is lying in the far end of the ureter. A pyelogram will have indicated the degree of dilatation of the pelvis of the calyx. In the presence of much dilatation and after trying vainly to find or to remove a stone, the opening of a thin-walled calyx with a blunt instrument will do but little harm and may quickly produce the stone.

Secondly, the utmost care should be taken to avoid bleeding, for the reason already indicated.

Thirdly, the old-fashioned method of needling the kidney, especially at the suspected location of the stone, is often helpful. I find the rounded end of an ordinary probe a most efficient and comparatively harmless implement for this purpose. Having located the stone in this way, the probe is held in position and a blunt clamp slid down along it, gradually burrowing a channel for itself as it proceeds. It is astonishing how large an opening can thus be made in the wall of a dilated calyx.

Fourthly, a method suggested by Caulk, of St. Louis, has been useful in one or two in-

stances. It consists merely in gently tapping the kidney, the idea being to shake the stone out of a calyx into the pelvic cavity.

Fifthly, great care should be used in extracting a stone, as it may easily break and leave fragments behind as nuclei for recurrences. In the event of the fracture of a stone, it is recommended that the pelvic cavity and calyces be thoroughly and somewhat forcibly irrigated with hot salt solution, with a view to dislodging fragments.

Sixthly, I believe that the fluoroscope used in conjunction with the operation by a trained observer, offers great possibilities of success. It is already used in several clinics in this country, and I believe the time will come, if indeed it is not already here, when the fluoroscope will be considered essential to the proper performance of pyelotomy or nephrotomy. There are certain points in the technique of this particular kind of fluoroscopy which need not be gone into here, but I will refer those who are interested, to the article by Braasch and Carman (Mayo Clinics, 1919, xi). I have now employed it successfully in a few cases, but have found that it is not without its drawbacks. While I believe that its success depends almost entirely on the skill of the observer, I also believe that small stones may easily be overlooked even by the most expert.

In short, my experience with renal stone and my study of the records of the hospital and of the literature, convince me that there are cases in which it is not humanly possible to remove all stones from the kidney. But I feel strongly that the number of failures will be reduced in direct proportion to the care which is taken before and during operation.

If I may quote from a recent article on the subject, I said "Lest the surgeon, having in mind the somewhat disheartening data here presented, might hesitate to advise or to perform operation for the removal of renal calculi, I wish to state emphatically that such a course will almost inevitably be a source of regret to the patient, if not to the surgeon.

"In spite of the high percentage of 'recurrence' here reported, the patient should not be encouraged to carry about with him, until necessity forces the issue, a stone which is surely but insidiously doing serious damage to his kidney. In most instances a pyelotomy will suffice to remove the stone, and we have pointed out the small risk attending this procedure. Even though nephrotomy is deemed necessary, the mortality is not terrifying, nor should the chance of secondary hemorrhage act as a deterrent. In other words, it is safer in the long run to remove a stone than to allow it to remain in the kidney."

solves itself into two parts, first, concerning the cases in which stones have been left in a kidney at time of operation, and second, concerning those cases in which following operation there has been a recurrence of stone. We must recognize that though most stones are easily shown by a good radiograph there are some that are not: these are usually the uric acid stones. In two or more instances where I have removed stones that did not show in radiographs they have been found on examination to be uric acid and I have further found that while these stones would give a fair shadow when put on a plate and radiographed, they would give only a very faint outline if put in a finger cot filled with water and then radiographed. It has seemed to me more than possible that in certain cases where we remove by pyelotomy a stone firmly caught in the pelvic outlet, (a stone in this position would not be covered with fluid and would be detectable with the x-ray) it would be perfectly possible to have another uric acid stone behind it, in the pelvis, or in a calyx that was dilated and filled with urine, and that such a stone would not be shown in the x-ray because surrounded with fluid, and ordinarily would not be looked for if the evident stone was removed by pyelotomy. Such a stone as this would be overlooked almost surely unless one explored the kidney pelvis through the pyelotomy wound and this is not easy to do with the finger without tearing the tissues: the introduction of an instrument to explore the calyces from the pelvis is not as satisfactory as the use of the finger.

Barney referred to one stone overlapping another so that the radiograph gives but one shadow. Within a year I have been misled by this condition and only the use of the x-ray shortly after operation allowed me to correct my mistake and remove the stone I had left; in this instance my first operation was pyelolithotomy; my second, nephro-lithotomy.

Somewhat similar to the foregoing are the stones that come about through the breaking off of a bit, often a very small bit, of a branched stone during its removal; its retention in the kidney leads to the formation of another stone through the addition of lime salts to this nucleus.

Most of the instances of true recurrence of a stone depend upon the fact that a kidney remains infected and that there is besides this a certain puddling of urine in dilated calyces or in atonic distended kidney pelvis. The infection furnishes the protein substance upon which the deposit of mineral begins; the stagnation due to puddling of urine greatly favors this precipitation. In my opinion the overlooking of stones at the time of operation and the prevention of their reformation can largely be brought about by the same manoeuvre, that is, the more general use of nephro-lithotomy rather than pyelo-nephrotomy. Especially do I believe that this should be done when the pelvis or calyces are dilated and when the kidney is infected. This operation allows the careful exploration of the calyces and kidney pelvis with the finger; the best way to avoid overlooking a stone. It also allows adequate drainage of the kidney by means of a tube brought out through the loin; this facilitates the clearing up of infection and allows irregular cavities to contract, affording, I believe, our best protection against the reformation of renal stones. I believe that as a rule pyelotomy should be restricted to the cases which present a small stone in a non-infected kidney.

The use of the fluoroscope to examine the kidney at the time of operation has, I believe, a rather limited field. A considerable proportion of kidneys are not sufficiently movable to make this possible. I do believe that the use of the x-ray during convalescence within a relatively few days after operation is a very desirable thing. It is possible

DISCUSSION OF DR. BARNEY'S PAPER ON RECURRENT RENAL CALCULI.

DR. ARTHUR L. CHUTE, Boston: It seems to me the discussion of Dr. Barney's paper naturally re-

if a stone is found at this time, as in the case I have reported, to reopen the wound in the loin and to reexplore the kidney with a good deal more ease than if one waits until the incision is solidly healed.

DR. LINCOLN DAVIS, Boston: I think that Dr. Barney's paper is intensely interesting and it is now up to the surgeons who operate on stones in the kidney to have x-rays taken before the patients leave the hospital to see whether stones have been overlooked. The problem of not overlooking them is a difficult one. There is one thing I want to mention, that is, in regard to the incision. I was always brought up to do a pyelotomy on the posterior wall of the pelvis away from the vessels, by turning the kidney forwards, but I have often found it very difficult, if not impossible, to do this; the kidney will not displace forwards unless it is mobilized to such an extent as to permit of absolute withdrawal from out of the wound. Lately I have done a number of operations for kidney stone by opening the pelvis along its inferior border, and have found it much easier than opening on the posterior wall or the anterior wall. You can readily put your finger into such a wound and make an adequate exploration of the kidney pelvis. I think that it is a good location for exploration of the pelvis, and also a good location for drainage of the pelvis. I don't see why you can't drain a septic kidney with stone through the pelvis opened in this way as well as you can through a nephrostomy.

DR. SAMUEL S. DEARBORN, Nashua: I would like to ask Dr. Barney whether he closes the operative wound in the pelvis of the kidney or leaves it open, and whether a suture may act as nucleus for subsequent stone formation?

DR. J. DELLINGER BARNEY, Boston: I think we have got some distance to go before the perfection of our technique in the use of the fluoroscope. I think that what Dr. Chute said is true. Where the kidney cannot be delivered out of the wound in a fat patient the fluoroscope is handicapped, but in favorable cases it is of distinct value. I think the observer must be specially trained in that line of work. It is one thing to look at a stomach full of bismuth and another thing to look at a kidney with a stone the size of a grain of wheat in it; and that is the thing you want to get out.

In regard to what Dr. Davis said, there are many instances where the pelvis is intrarenal, where it is all the same size until it enters the hilus of the kidney, but where it is big enough I think the introduction of the finger is a good procedure and offers more chance for delivery of the stone.

In regard to Dr. Dearborn's question, we always suture the pelvis where possible. It may not always be expedient, owing to the depth of the kidney in the wound, but as a rule a suture is placed in the ureter and does not pierce the mucosa; it simply goes through the external tissues. I don't know whether it could act as a cause for the recurrence of stone. The suture we use is OO chronic gut.

EXPERIENCES WITH THE USE OF RADIUM.

By GEORGE C. WILKINS, M.D., F.A.C.S., MANCHESTER, N. H.

DURING the past few years there has been an increasing interest manifested in the use of radium as a therapeutic measure, particularly in the treatment of cancer and in various superficial pathological conditions that by

their accessibility are amenable to; external radiation. This increased interest of the medical profession in radium treatment has produced two definite results. First, the larger institutions devoted to the care of diseases have, by endowments or otherwise, been enabled to acquire large amounts of radium, and it is to these institutions, as leaders in the work, that we must look for inspiration and scientific guidance. Secondly, a scattered few individuals or groups of individuals, chiefly surgeons or roentgenologists, have acquired smaller amounts of radium, and have developed smaller centers, usually at some distance from the larger institutions.

I will grant you, that were it possible, it might be advisable to treat all radium cases at the larger institutions, but these centers are already greatly overburdened with the influx of suffering patients, and to many, the journey from home is inconvenient and sometimes prohibitive.

Belonging as I do to the second classification of workers, I maintain that there is a definite and real field of usefulness for the smaller amounts of radium in the smaller centers.

I realize it is impossible for me to indicate end-results in certain types of cancer that I have treated, and will not attempt to do so at this early date, but will indicate the conditions as they appear at present. On account of the length of time allowed for reading this paper, the description of symptoms, technique of application, and history, will be very sketchy and brief, for it is my purpose to indicate a few of the more outstanding results and impressions, without taking up your time with analytical discussions.

The largest group comprises the various epitheliomas about the skin of the face and head, and these have responded wonderfully. All except the larger and deeper lesions have disappeared in four to six weeks, though one large epithelioma of the ear, involving the whole upper half, is taking over three months. Cancers about the face are frequently very disfiguring and in some locations the surgical removal would add to the deformity. I may add that these patients are extremely grateful for the cosmetic improvement.

Eight cases of menorrhagia have been treated, seven with perfect success after one treatment, and one that has required a second application. These have been treated from two and one half to eight hours each with 50 m.g. of radium. It should always be borne in mind that intrauterine treatment should never be given where there is an associated acute or chronic pelvic inflammatory condition.

I have been very much pleased with the good results following the treatment of tubercular glands, and have found marked improvement in all but one case. In this instance

caseation had evidently commenced prior to my treatment, and when this has occurred one may expect no benefit from the treatment. In the case of an ex-soldier who had undergone three extensive operations on both sides of his neck for broken-down tubercular glands, I was privileged to treat the subsequent glands which developed on both sides of his neck and in one axilla. These lymph nodes, which developed rapidly, were treated within a few weeks after they became palpable, some having reached nearly the size of an English walnut. Within three weeks after external radiation, there was noticeable diminution in the size of the nodes, and this retrogression continued until there could only be felt a few very small, hard nodules. Last year over a dozen glands were thus treated successfully in this single individual. Where there are chronic sinuses remaining after the surgical removal or curettage of tubercular lymph nodes, I have found that radium applied over the area, combined with direct radiation in the sinus itself, materially aids in the rapidity of healing.

In treating carcinoma of the rectum, I have found it possible to successfully introduce radium needles directly into the growth under the direction of the eye, through an electrically lighted protoscope, the needles being introduced with a slender but strong carrier. This method of introduction is extremely valuable, particularly in the annular type, as excellent cross-firing can be obtained between the needles and a tube retained within the orifice of the stricture.

I have treated only one case of exophthalmic goitre. This young woman was a normal-school student, and for two seasons had been unable to pursue her studies more than three months. She had been under the care of two physicians, and finally consulted an internist who treated her by rest in bed and some medication for three months. At the end of this time there was less tremor and a reduction in the pulse rate from 120 to 90, but immediately resumed its former rapidity after she had been up and about a few days. On July 14 and 23, 1920, I gave her two treatments of three hours each with 50 m.g. of radium and a similar treatment on September 10. October 20th, when she was next examined, her pulse was running between 80 and 85, there was less sweating, practically no tremor in the hands and tongue, and she was feeling stronger. She had three subsequent treatments which resulted in a marked diminution in the size of both lobes, so that the only visible enlargement is in the isthmus. The pulse still remains close to normal and she has been able to remain in school through the past year. This is only one case, but it is an indication of what can be accomplished.

Over eight months ago I removed a mixed cell sarcoma from the orbit of a woman 71

years old. Because of a benign growth the eye had been removed from this socket 35 years before. At the time of my operation there was a bulging, pulsating mass. Ten days after the removal of the tumor, I began giving radium treatments within the orbit. Healing of the orbital cavity was delayed considerably by the formation of sloughs caused by radiation. There is no indication at the present time of any recurrence. Without post-operative radiation an early recurrence would have been expected in this case.

I have under treatment at the present time one case of melano-epithelioma of the face. When this man was referred to me, he had an elevated growth with redundant edges, measuring a little more than 3 c.m. in diameter. Cross-firing was easily obtained in this case by needles buried deeply and a tube of radium strapped to the surface of the growth with suitable screening. Since April 21st of this year, he has had three eight-hour treatments, and the tumor at the present time is 1.5 c.m. in diameter and is level with the surface of the skin, except at the very upper edge. Eventually, however, I expect the usual result in this case.

A few cases of recurrent carcinoma after amputation of the breast have been treated, and a larger number have been refused on account of the extent of the recurrence. In all but one case there has been at least temporary diminution in the size of the recurrent masses, and I have found this to be particularly prompt when the recurrence was in the skin, and not too firmly adherent to the chest wall. Where the external mass had developed from a recurrence beginning in the chest wall between the ribs there has been no retrogression in the size of the mass. The palpable lymph nodes usually begin to decrease within three weeks after extensive radiation. I believe radium treatment accomplishes all that could be expected of secondary operation. An elderly woman was referred to me who had had scirrhous cancer of the breast for five years. There was a mass 8 c.m. in diameter firmly adherent to the chest wall with an ulcerated area in its depressed center 3 c.m. in diameter. Because of her age and the local extension, I gave her treatment by external radiation over the entire surrounding areas, including the axilla and supra-clavicular regions, as well as deeper radiation in the region of the ulcer with buried needles. Much to my surprise, three weeks after this treatment the mass was movable on the chest wall. Treatment was repeated one month after the first series, and this second series caused considerable local and general reaction. Three months after this last treatment, the mass was freely movable, the ulceration had become entirely healed, and three weeks later, after a preliminary radiation, and with

gas anaesthesia, the mass, with underlying muscle and surrounding tissues, was removed. Subsequent to operation she has had x-ray treatment. She is well and will be watched carefully for signs of recurrence. The pathological description is significant in this case, because the pathologist states that the sections show an enormous increase in the connective tissues in both breast and muscle, and the masses of cells are very narrow and small with no mitotic figures seen. The site of the former ulceration was covered with a thin skin and the tissue beneath was very firm.

In cancer in and about the mouth the immediate results have varied, and while epitheliomas arising from the skin margin of the lip respond rapidly to treatment, the growths developing in the tongue, floor of mouth, and about the alveolar processes, are difficult to treat and the results are less satisfactory. Better results can be obtained by using either the soldering iron or electric desiccation first, followed later by radium. I have found the steel radium needles very useful in the mouth, and cross-firing can be obtained by suturing a screened tube of radium to the mucous membrane near the needles.

One patient with a fibroid uterus about the size of a three and one-half months' pregnancy, who was flowing excessively, was given one treatment. Flowing ceased in ten days, and in three months the uterus had diminished one-half in size and at five months is only slightly larger than a normal uterus.

The second largest group treated, comprising fifteen cases of uterine cancer, have been the most interesting of all. These can be divided into four subdivisions: (1) carcinoma of the cervix, operable, 2 cases; (2) carcinoma of the cervix, inoperable, 7 cases; (3) recurrent carcinoma after pan hysterectomy, 4 cases; (4) adeno-carcinoma of the uterine fundus, 2 cases.

One patient with carcinoma of the fundus was given post-operative radiation in the vaginal vault. In this case the carcinoma was not discovered until after operation as it was a complication associated with large uterine multiple fibroids. The other was treated with radium five days prior to pan hysterectomy. Both patients are well, four and seven months respectively, after operation.

The patients with recurrences after pan-hysterectomy varied in their response to radium treatment. The last patient began treatment in June and there has been no improvement. One began treatment in July, 1920, and was relieved of all bleeding at once, was relieved of pain for five months and died one year after beginning treatment. One with a recurrence five months after pan hysterectomy, and with the vagina so filled with growth that the index finger could not be inserted its full length, was treated in August, 1920.

At this time she had little pain, but urinated every one-half to one hour. Four weeks after treatment she could hold urine four hours and much of the growth had disappeared from the vaginal surface. This improvement continued for four months, when I gave her a second series of treatments from which she suffered a tremendous reaction. Recovering from this in two weeks she was quite well for three months, then rapidly grew worse and died eight months after beginning radium treatment and thirteen months after operation.

The first uterine cancer that I was privileged to treat was in a recurrence after pan hysterectomy in a woman 62 years of age. Her operation was performed three years previously and for nine months prior to my treatment with radium she has been flowing continuously, was having pain most of the time, had practically given up her housework, and was in bed much of the time. On examination there was an ulceration with ragged, bleeding edges in the vault of the vagina. With this as a center, there was a surrounding umbrella-like mass of tissue about 2.5 cm. in thickness and extending in all directions and involving the upper vaginal mucous membrane. Treatments were instituted July 1, 1920, and she has had five subsequent treatments. There has been no flowing since the first treatment. She was relieved of pain within a short time, and for ten months after the first treatment was able to do the major portion of her housework, and care for her invalid husband. There was very little loss of weight and the patient has been quite happy and contented during the extra year which I think was added to her life. She is still able to be out of bed part of the time, but is now losing weight and strength.

There were seven cases of inoperable carcinoma of the cervix, one of which might have been considered operable had it not been for the marked obesity of the patient. There were two border-line cases, both of whom have gained weight, strength, and have been free from any pain or vaginal discharge.

There were four advanced cases, all having considerable pain and all were relieved of bleeding and vaginal discharge. Three were relieved of pain for a short time only, and in one case there was no relief of pain. One of these patients with inoperable carcinoma of the cervix when first examined had been flowing for nine months, her red count was 2,500,000 and the haemoglobin 40%. The vault of the vagina was filled with a foul-smelling, cauliflower mass, which bled at the slightest touch. That was on December 1, 1920. Three days after treatment with radium the flow stopped and has not returned. Treatment was repeated January, 1921. In May, she had gained thirty pounds in weight, had no pain, color was good, and had gone to work in the mill where she has remained since that time. The

first of this month, ten months after beginning treatment, she is holding her weight, her color is excellent, she has no pain, the uterus is of normal size, cervix of normal size and nearly normal shape, and the uterus is fairly movable. There has been no change in the local condition in the past six months.

There were two patients with carcinoma of the cervix which were considered operable by myself and another member of the hospital staff, after they had been subjected to preliminary radium treatments. The first patient, Mrs. Y, gave a history of bloody vaginal discharge for two months. There was a soft, fairly smooth mass about the size of a tennis ball growing from the cervix and involving the entire circumference of the cervix. This mass bled very easily and there was much dirty reddish-gray discharge. The first treatment was 2400 m.g.h. with the radium imbedded within the tumor mass. Four weeks later there remained a mass less than the size of an English walnut. This mass and the cervix were given 1200 m.g.h. treatment, and as the uterus was freely movable, operation was decided upon when the cervix had become smooth, and this was accordingly carried out three weeks later by my colleague. He performed a very thorough Weirtheim operation from which the patient made a good recovery, leaving the hospital in three weeks. The pelvis is free from all signs of growth, and her bowel and urinary functions are normal, but she has suffered from prostration and neuritis in both legs, which has lasted five months. After examining the uterus the pathologist reports as follows:

"The parametrium is not involved. The lesion extends up the cervical canal to the internal os. At the internal os it is just beneath the lining and as it extends down to external os it involves the tissue more and more.

The cells are small and in small clumps, more like an alveolar type, the stroma increased. No mitotic figures are seen. In other words, the cells do not look healthy. On the end of the cervix the cells are larger and an occasional mitotic figure is seen."

It is needless to say that if operation had not been decided upon, the cervical canal and cervix itself would have received much heavier radiation which would have further destroyed the nests which remained. This patient would have been in better condition today if we had continued with the radium treatments, but whether or not the final result would have been as satisfactory is a debatable question.

The other patient who was considered operable, Mrs. X., was 52 years of age and had had a slight bloody discharge for eight months. The cervix was fairly movable and not much enlarged. Its tissue was unusually hard and

there was an ulcerated area about the cervix. She was given three 24-hour treatments, with 50 m.g. of radium in the cervical canal. Ten days later she was operated upon by the Weirtheim method. There was an induration extending 1 cm. to the right of the cervix, and there were two enlarged glands removed from the right iliac vessels near the brim of the pelvis. She made a good, immediate recovery, but her convalescence was stormy and protracted. The pathologist's report in this case was as follows:

"Sections show an improvement beyond comprehension. There is no evidence of the lesion in the parametrium. The lumen of the cervix is covered with a pyogenic membrane beneath which is young connective tissue and there are only left a very few scattered areas of epithelial nests. There is an occasional epithelial collection in the vaginal tissue. These epithelial cells, however, are small and not a single mitotic figure is seen. I hesitate to say it but it looks as though the lesion was completely removed."

I realize the number of cases in this report is too small to make the findings of any great value, but in a field of treatment which has been of comparative recent development the combined observations of many workers cannot help teaching important lessons.

From the above report may we not conclude that the pathological tissues which had been previously subjected to radium treatments, definitely tell the story of the destructive action which has taken place, and with the clinical evidence, demonstrates that a lethal injury can be delivered to cancer cells by the smaller amounts of radium element, providing the screening and period of application is such that a maximum degree of efficiency is obtained.

From the mass of evidence being presented by many eminent radiologists it would appear that only in the very earliest development of cancer of the uterine cervix can radical operation offer longer life than radium treatments, and with the latter method the high immediate mortality is eliminated.

Radium is the treatment of choice in superficial epitheliomata, in the treatment of menorrhagia, and in small fibroids that are not pedunculated. Its use before operation in breast cancer, combined with x-ray treatment after operation, would diminish the number of recurrences. I would also urge the more extensive use of radium in the treatment of tubercular lymph nodes.

The relief from pain, foul discharges, excessive flowing, and the general physical improvement obtained in inoperable cancer of the uterine cervix alone, justifies a more extensive use of radium.

DISCUSSION OF PAPER BY DR. G. C. WILKINS.

DR. CHANNING C. SIMMONS, Boston: Radium is available to the public for the treatment of disease in two ways: first, institutions, in amounts larger than the average individual can afford to hold and which have suitable apparatus for obtaining emanations, and second, physicians who have smaller amounts of the element, usually from 10 to 50 m.g. in applicators of varying size and shape. A third source may be mentioned, the so-called radium banks, companies owning radium which sell or rent tubes of emanation to physicians desiring to use them. This seems to me a somewhat questionable procedure, as it places a very powerful element in the hands of physicians who may be ignorant of its dangers. I feel that radium should only be employed by physicians fully conversant with its use.

The institution and the individual physician each have a distinct field in the treatment of disease. The average case of epidermoid cancer of the skin or menorrhagia can be as well treated by the physician as by the institution. Other groups of cases as the leukaemias, and certain cases of cancer of the uterus where large doses are required, or cases where special forms of apparatus, as "seeds," are indicated, are better treated at the institution.

Radium is valuable in three ways. As a curative agent, as a palliative agent, and as a prophylactic used in conjunction with operation, and the physician should have what he expects to accomplish clearly in mind before beginning treatment. X-ray treatment as a pre- or post-operative measure is in most instances to be preferred to radium.

To take up the classes of cases Dr. Wilkins has mentioned more in detail. We have had no experience in the treatment of tuberculous glands or goitre at the Huntington Hospital.

Skin cancer can be as well treated by a physician with a comparatively small amount of radium as at an institution, in all but exceptional cases, and the results are good. In cancer of the ear or back of the hand much better results can be obtained by excision.

In the treatment of menorrhagia the radium has two distinct actions, the first, on the uterine mucosa, and secondarily, on the ovaries. In young women it is necessary to exercise great care as there is always the possibility of sterilization.

In inoperable or recurrent cancer of the breast x-rays are usually to be preferred to radium unless the latter is used as seeds in individual recurrent nodules. The results are surprisingly good if it is remembered that a permanent cure is not to be expected. Post-operative x-ray treatment after radical removal of a cancer of the breast is apparently of distinct benefit. If preoperative x-ray treatment is given the wounds heal slowly and extensive sepsis is not unusual.

Cancer of the buccal mucosa if seen early should be treated by operation performed in two stages, the local growth removed at the first operation and radical neck dissection performed about ten days later. In more advanced cases or in elderly people local excision with the cautery followed by local radium treatment if necessary, and x-ray treatment of the lymphatics of the neck, is the treatment of choice. In the more advanced cases we are using radium at the Huntington Hospital by the seed implantation method which gives better results and is followed by less reaction than when the application is made externally. Cancer of the lip, we believe, should be treated surgically.

Certain cases of cancer of the rectum do well under radium treatment if it is remembered that the treatment is only palliative, and the results are better if a preliminary colostomy has been performed. If the radium is not applied accurately in needles or as seeds, distressing tenesmus is apt to result.

Inoperable cancer of the cervix reacts particularly well to radium and some of the results are remarkable considering the extent of the disease. Recurrent cases, when the recurrence is in the vault of the vagina, do particularly well as in these cases the lymphatic channels are closed. If there is marked infiltration of the broad ligaments, however, palliation is all that can be expected. It is the custom at the Huntington Hospital to give one heavy treatment if there is any hope of cure. In the advanced cases it is necessary to make the treatments lighter as the reaction is more severe. We are still advising radical operation in suitable early cases.

Osteogenic sarcoma is apparently little affected by radium, but in the so-called central giant-cell sarcoma of the bone, curetting, followed by radium treatment, gives good results. Certain sarcomata of the soft parts react well to radium treatment while others do not. It must be remembered that the action of x-rays and radium on tissues of the lymphoid type is entirely different from their action on tumors of epithelial origin.

DR. GEORGE C. WILKINS, Manchester, N. H.: I have nothing particular to add.

Address.

THE PRACTICE OF MEDICINE IN MASSACHUSETTS. A DISCUSSION OF THE LAW GOVERNING THE REGISTRATION OF PHYSICIANS.*

BY HON. BENJAMIN LORING YOUNG.

Speaker of the House of Representatives.

EVERY physician knows that the practice of medicine in Massachusetts is restricted and regulated by law. But how many are really familiar with the history and present application of the registration statute, and how many can answer accurately the following questions: Can a chiropractor be licensed, either as a physician or under a separate registration board, as in certain other states? Is osteopathy an independent profession, or a branch of the science of medicine? May a duly registered physician be deprived of the right to practice, either by the courts or by the board of registration? The purpose of this paper is to answer such questions and to describe, strictly from a legal standpoint, that part of the law of Massachusetts which regulates the practice of medicine.

Perhaps a brief explanation is needed as to the meaning of the word, "law." The common law of England, as developed and modified in this country, is the basis of the jurisprudence of Massachusetts. This common law, so far as it affects particular subjects, has, from time to time, been codified and enacted by the Legislature in statutory form, but, in the main, it remains uncoded and is disclosed, or declared, merely in the decisions of the Supreme Judicial

* An address delivered at a meeting of the Essex North Medical Society, on November 2, 1921.

Court. Important court decisions have a far-reaching effect upon the development of the law and often become judicial precedents. The basic common law is, of course, subject to amendment and addition by the Legislature, through the passage of statutes. For example, there is no common law governing the registration of physicians. On this subject, we must look to the statutes passed by the Legislature,—the law-making body of the Commonwealth. The statutes of Massachusetts of general application have recently been consolidated in two volumes, known as the General Laws. This consolidation took effect on January 1, 1921, and in this paper will be referred to and cited by its title. We must also consult the decisions of the Supreme Judicial Court, because while the Legislature enacts the statutes, the Court must, in the last analysis, construe and interpret them and, in doubtful cases, determine upon their meaning, scope, and legal effect. We should bear these facts in mind throughout our discussion of statutes and decisions, and also the fact that this paper is intended to be an impartial statement of the law as it is, and not as some physicians think it ought to be. Furthermore, it should be remembered that the writer is a lawyer and legislator, not a physician, and that he makes no claims to medical knowledge.

REGISTRATION ACT OF 1894.

For a long period before 1894, Massachusetts had no statute for the registration of physicians. Apparently any person could practise medicine without examination or license. Governor Frederic T. Greenhalge, in his inaugural address of that year, spoke to the Legislature as follows:

"I ask you also to consider the expediency of requiring that practitioners of medicine be registered, in somewhat the same manner as pharmacists are now registered. In every state of the Union, except five, such a system of registration has been established, and it cannot fail to protect the public, and at the same time help to maintain a high standard among medical practitioners."

This recommendation led to the passage of Chapter 458 of the Acts of 1894, which provided for a board of seven physicians, to be appointed by the Governor. The requirements as to the personnel of the board have remained practically unchanged. The members must be graduates of a legally chartered medical college, or university, having the power to confer degrees in medicine, and must have been for ten years actively engaged in practice. No member

"shall belong to the faculty of any medical college, or university, and not more

than three members thereof shall at one time be members of any one chartered state medical society."

The law with regard to the appointment and organization of the board is found in the General Laws as Chapter 13, Sections 10 and 11.

The balance of the original statute, as amended, is now included in Chapter 112 of the General Laws, Sections 2 to 12. These sections are too long to quote in full. Section 2 provides that applicants for registration must be twenty-one years old and of good moral character, and have received the degree of Doctor of Medicine, or its equivalent, from a legally chartered medical school having the power to confer degrees and giving a full four years' course of not less than thirty-six weeks in each year. The requirement of a four years' course was added in 1917, and does not apply to applicants who matriculated before March 10 of that year in a medical school giving a shorter course of study, provided it had the power to confer degrees.

An amendment adopted in 1917, and now found in Section 8 of said Chapter 112, requires each physician to present for record his certificate of registration with the clerk of the city or town where he has his office or usual place of business. The clerk must keep an original record of this certificate open to public inspection, and forward a duplicate thereof to the board.

The board may, after a hearing, suspend or revoke the registration of any physician found to be insane or guilty of deceit, malpractice, gross misconduct in the practice of his profession, violation of the law, and other improper acts enumerated in the statute (Chapter 112, Sections 2 and 61 to 65). The Supreme Judicial Court may enter a decree reversing or reversing the decision of the Board, "if it appears that the decision was clearly wrong." Thus the Board itself is charged with the responsibility of maintaining ethical as well as intellectual standards in the medical profession.

The examinations are to be of scientific and practical character, and "shall include the subjects of anatomy, surgery, physiology, pathology, obstetrics, gynaecology, and practice of medicine and hygiene." "Psychiatry" was added to this list of required subjects by the Legislature of 1921. Another amendment in 1921 authorized the Board to employ expert assistance in conducting hospital and laboratory tests.

The teeth of the statute are found in Section 6 of said Chapter 112, which provides penalties of fine and imprisonment for any person who, without being registered,

"holds himself out as a practitioner of medicine or practices or attempts to practice medicine in any of its branches."

APPLICATION OF THE STATUTE TO OSTEOPATHY AND OTHER SPECIAL METHODS OF HEALING.

It is provided in Section 7 of said Chapter that the law shall not be held to discriminate against any particular school or system of medicine; nor to apply to a commissioned medical officer of the United States in the performance of his duty; to an interne or medical officer with a limited registration as such under Section 9 of said Chapter—that section being an amendment passed in 1920; to physicians of other states under certain conditions;

"nor to registered pharmacists in prescribing gratuitously, clairvoyants or persons practising hypnotism, magnetic healing, mind cure, massage, Christian Science, or cosmopathic method of healing, if they do not violate any provision of the preceding section."

This group of exceptions did not originally include osteopaths. They were added by Chapter 467 of the Acts of 1901, under the name of osteopaths. In 1909, the Legislature passed another new statute, Chapter 526, entitled, "An Act relative to the practice of osteopathy." That Act allowed certain persons who were practising osteopathy before January 1, 1909, to be registered as osteopaths, provided they secured such registration before September 30 of that year. Section 3 thereof provided that

"Persons registered hereunder (namely, as osteopaths) shall not be permitted to prescribe or administer drugs for internal use, or to perform major operations in surgery, or to engage in the practice of obstetrics, or to hold themselves out, by virtue of such registration, as and for other than osteopaths."

Except as might be inconsistent with the provisions of that Act, the term "osteopathy" was declared to have the same legal construction and meaning as the term "medicine." These provisions now appear in the General Laws, Chapter 112, Sections 10 and 11.

The result of the statute of 1909 was to allow certain osteopaths already in practice to obtain a kind of limited registration. An osteopath so registered may not legally furnish a death certificate required by law to be furnished by a physician. (Opinion of Attorney-General Henry C. Attwill, 4 Op. A.G. 407, 1915.) Except for this temporary and limited registration, the law regards osteopathy as included in the practice of medicine. Osteopathy is not prohibited, but it is not, except as above stated, permitted under any special license. All osteopaths admitted to practice after 1909 must be fully registered physicians, taking the same ex-

amination, subject to the same law and standing on an equal footing with all other members of the medical profession.

It is unnecessary to recite in detail all the amendments which have been made to the law from 1894 to date. Whoever wishes to study the development of the law will find that amendments were adopted in 1896, 1897, 1901, 1909, 1913, 1915, 1917, 1918, 1919, 1920 and 1921, all of which, save the acts of the current year, have now been consolidated in the General Laws.

DECISIONS OF THE SUPREME JUDICIAL COURT.

To obtain a complete understanding of the law, we must be familiar with the several decisions by which the Supreme Judicial Court has declared its legal meaning and effect. Questions which may seem obvious to many have, nevertheless, been taken to the court for final decision. It should be remembered that all of these cases but one were criminal prosecutions, the defendant having been found guilty in the trial court. Desiring to escape punishment, the defendant then appealed the case to the highest court, claiming that his particular acts were not within the scope of the statute, and raising various questions of law. The decisions are herein referred to in chronological order rather than by specific subjects. The language of the Court is quoted in some of the more important cases:

In *Commonwealth v. St. Pierre*, 175 Mass. 48 (1899), it was decided that if a person held himself out as an eye specialist, he held himself out as a physician within the meaning of the statute.

In *Commonwealth v. Pora*, which was before the Court on two occasions, 195 Mass. 443 (1907), and 196 Mass. 326 (1907), it was held that a midwife could properly be convicted for violation of the statute. This case came before the Court on an agreed statement of facts. The Court ruled that whether or not these facts showed that the defendant was engaged in the practice of medicine was a question of law to be decided by the Court, and that the opinions of experts on this question could not be introduced as evidence. The Court held as law that, "obstetrics is a branch of the practice of medicine." The Court also decided the statute to be constitutional, and said:

"The maintenance of a high standard of professional qualifications for physicians is of vital concern to the public health, and reasonable regulations to this end do not contravene any provision of the State or Federal Constitution."

In *Commonwealth v. Jewelle*, 199 Mass. 558 (1908), the defendant used various so-called remedies described as "vitalizer," electric or ray baths, and "stomach wash." He claimed that if he did not prescribe or deal out a substance to be used as medicine, he could not be

found guilty under the statute. The Court, overruling this argument, said:

"It would be too narrow a view of the practice of medicine to say that it could not be engaged in in any case, . . . otherwise than by prescribing or dealing out a substance to be used as a remedy. The science of medicine, that is, the science which relates to the prevention, cure or alleviation of the disease, covers a broad field, and is not limited to that department of knowledge which relates to the administration of medicinal substances. It includes a knowledge, not only of the functions of the organs of the human body, but also of the diseases to which these organs are subject, and of the laws of health and the modes of living which tend to avert or overcome disease, as well as of the specific methods of treatment that are most effective in promoting cures."

This decision was obviously of far-reaching effect. If the Court had given the words, "practice of medicine," a narrow construction, limited solely to the administration of medicinal substances, the registration statute would have become an ineffective instrument. This case alone well illustrates the great power and authority of the courts under our system of government. By giving the words a broad application, the Court established a precedent which might well become a basis for a decision that all therapeutic agencies are embraced within the practice of medicine.

Now, consider again Section 7, quoted above, which exempts from the application of the statute persons practising hypnotism, mind cure and certain other methods claimed to be of therapeutic value. This exemption is, in fact, qualified by the phrase—"if they do not violate any provision of the preceding section,"—that is, practice medicine without being duly registered. It was natural, however, that the members of the several healing cults named in Section 7 should claim immunity from prosecution for any acts done by them in line of their professional work. The first court decision on this point appears in *Commonwealth v. DeLon*, 219 Mass. 217 (1914). Here the defendant was a woman clairvoyant. The evidence showed that she not merely gave advice while in a trance, but also furnished medicine, for which she was paid. She claimed that she was not learned in diseases, but that while in her trance she was told by occult force, the nature of the patient's trouble and the remedy therefor. The Court considered her argument more seriously than many laymen might feel it deserved. After defining the word, "clairvoyant," as "a person who sees, while in a trance, things which by reason of distance or for other reasons are not ordinarily visible," the Court said that the

statute so construed "does not authorize a defendant to prescribe medicines revealed to his hearing by 'occult force' while in a trance." This woman could not have been prosecuted merely for holding herself out as a clairvoyant, but as under the guise of acting as a clairvoyant she did in fact and in law enter upon the practice of medicine, her conviction was sustained. This, again, is a sound and broad decision based upon a principle susceptible of very wide application. A contrary opinion by the Court in this case would also have broken down the entire statute.

THE LEGAL NATURE OF CHIROPRACTIC.

In *Commonwealth v. Zimmerman*, 221 Mass. 184 (1915), the defendant was a chiropractor. He claimed that the basis of chiropractic is the adjustment of the vertebrae of the spine, that the malposition of these vertebrae is the cause of abnormality, that he did not cure but simply adjusted, and that he was not engaged in the practice of medicine. The Court said:

"Although the defendant did not prescribe medicine, and testified that he paid no attention to the patient's description of symptoms or disease, yet it is obvious that his purpose was to treat the human body in order to make natural that which he found abnormal in the narrow field of his examination. The removal of pressure upon nerves is a means of relieving the illa flowing from that source. 'Chiropractic' is defined as 'A system of healing that treats disease by manipulation of the spinal column' (Webster's International Dictionary). The defendant's manipulation was of a most important part of the body and related to a nerve center. It might have been found that it could have no other aim than a prevention of disease or relief from existing disarrangement of bodily functions. That which the defendant did, and its manifest purpose, might have been found to be practicing medicine within the meaning of the statute. Medicine relates to the prevention, cure, and alleviation of disease, the repair of injury, or treatment of abnormal or unusual states of the body, and their restoration to a healthful condition. It includes a broad field. It is not confined to the administering of medicinal substances or the use of surgical or other instruments. . . . In order to practice medicine, one need not cover the entire field of science."

In other words, the Court found that the defendant, a chiropractor, was, in fact, practicing medicine. The defendant suggested another defence, namely, that he was exempt from prosecution because his practice might properly be described as "cosmopathic method

of healing," one of the specific exceptions in Section 7, already referred to. In this particular case, the defendant's counsel had neglected to bring up this defence in the lower Court. The Supreme Court, however, discussed the point on its merits, and said:

"Even if this point had been saved, there is nothing in it. 'Cosmopathic' is defined in the New Standard Dictionary as, 'Open to the access of supernormal knowledge or emotion, supposedly from a preternatural world.' Without undertaking to decide what a 'cosmopathic method of healing' may be, plainly it does not include the defendant's operations."

This defendant also claimed the statute to be unconstitutional, but the Court again overthrew this argument, and said:

"The protection of the public from those who undertake to treat or manipulate the human body without the degree of education, training and skill which the Legislature has prescribed as necessary to the general safety of the people, is within the power of the State."

The very next case reported was *Commonwealth v. New England College of Chiropractic*, 221 Mass. 190 (1915), a prosecution of the New England College of Chiropractic for giving a certificate of "Doctor of Chiropractic." The Court held that the giving of such a certificate, or degree, was unlawful, and the college subject to prosecution. This case was based upon an entirely different statute, and is mentioned here merely for reference.

In several states, independent registration boards exist for chiropractors as well as for osteopaths. An unsuccessful attempt was made in 1921 to establish an independent board of chiropractic in Massachusetts and, presumably, this matter will be introduced again in the future.

In connection with registration boards in general, it is worthy of note that several states have three permanent registration boards for physicians belonging to the regular or allopathic, the homeopathic, and the eclectic schools of medicine; also, that among the exceptions comparable to those in Section 6 of the Massachusetts statute, quoted in the body of this article, other states include "sun cure, Swedish movement cure, osteopathy, and other manual manipulators who use no other means." A valuable summary of laws and board rulings regulating the practice of medicine in the United States, has been published by the American Medical Association, revised to March 15, 1918.]

Commonwealth v. Lindsey, 233 Mass. 392

(1916) was another clairvoyant case, while the facts in *Commonwealth v. Houtenbrink*, 235 Mass. 320 (1920) involved treatment of the human eye. In each case the acts described were held to violate the statute, but the cases add nothing to those already discussed. Only last October, the Court decided, in *Commonwealth v. Dragon*, that a man who practised bone setting was, in fact, practising medicine, and subject to the registration statute.

REVOCATION OF REGISTRATION.

Perhaps the most important opinion ever delivered by the Court, came down in September last, in the case of *Lawrence v. Briry*. The amendment of 1917 had authorized the board to revoke any registration for deceit, malpractice or gross misconduct. In this case, a physician who had been registered, was found guilty by the board of gross misconduct. He appealed to the Supreme Judicial Court, which in every particular upheld the action and authority of the board. The opinion was delivered by Chief Justice Rugg, and is worthy of note. In upholding the amendment of 1917, the Chief Justice points out that,

"Soundness of moral fibre to insure the proper use of medical learning is as essential to the public health as medical learning itself. Mere intellectual power and scientific achievement, without uprightness of character, may be more harmful than ignorance. . . . A physician, however skilful, who is guilty of deceit, malpractice, or gross misconduct in the practice of his profession, even though not amounting to an offence against the criminal laws, may well be thought to be pernicious in relation to the health of the community. It is for the Legislature to determine within reasonable limits in the exercise of the police power what the tests shall be for moral character sufficient to enable one to continue in the practice of medicine."

This decision confirms in the board a far-reaching power to uphold the ethical standards as well as the practical skill, of the members of the medical profession.

Here is a considerable body of law as set forth in the statutes and decisions, the obvious purpose of which is to promote the health and welfare of the public by restricting the practice of medicine to men of adequate professional training and skill. But this entire body of law, statutory and judicial, could be wiped out at one stroke by the passage of a statute repealing the registration law. Even as the passage of any law depends upon public opinion, so does its retention on the statute books.

A century ago Massachusetts made an experiment in this direction, a fact probably real-

ized by comparatively few members of the profession today. A statute passed in 1818, relating to medical practice—while it did not impose a criminal penalty for practising medicine without a license, did provide that no person practising "physic or surgery" should be entitled to the benefit of law for the recovery of any debt or fee for his professional services unless licensed by the Massachusetts Medical Society or accredited as a doctor in medicine at Harvard (Chapter 113 of the Acts of 1818). This statute was construed and upheld by the Supreme Judicial Court in several cases, which are here noted for reference: *Spaulding v. Atford*, 1 Pick. 33 (1822); *Hewitt v. Charier*, 16 Pick. 353 (1836); *Wright v. Langdon*, 19 Pick. 288 (1837), and *Hewitt v. Wilcox*, 1 Metcalf 154 (1840). The argument was raised that this statute conferred special privileges and immunities upon a particular class of citizens, but the Court upheld it on the ground that its sole purpose was to guard the public against ignorance and negligence in the practice of the medical profession, "and to insure to the citizens of the Commonwealth, the professional services of a body of men who at least have had the means of being carefully trained in the theory and practice of their profession in a school of recognized character and reputation, under teachers of known science and experience."

The statute was broadened by several amendments conferring equal privileges on the graduates of certain other medical institutions, but the statute, with its amendments, was apparently repealed absolutely in 1836 (see Revised Statutes, 1836, Chapter 146, Section 5), and no similar statute for registration of physicians enacted until the message of Governor Greenhalge was sent to the Legislature in 1894. An old motto tells us that "eternal vigilance is the price of liberty." One may say with equal truth that eternal vigilance is the price which must also be paid to secure and maintain adequate public health legislation and sound professional standards in the practice of medicine.

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THE ADVANTAGE OF SERUM THERAPY AS SHOWN BY A COMPARISON OF VARIOUS METHODS OF TREATMENT OF ANTHRAX

JOSEPH C. REGAN (*The Am. Jour. Med. Sci.*, CLXII, 3, Sept., 1921).

The author first discusses the objections to various forms of local treatment. Thermocautery, still widely employed, he condemns because it is extremely painful, leads to hideous deformity, and causes prolonged convalescence if the patient lives. It is not specific, may break down into the barrier zone about the infection, and is of no avail if anthrax septicaemia exists.

Chemical cauterization has many of the same contraindications. The possibility of causing nephritis is an added danger.

Surgical treatment is of two kinds—Incision and Excision. The writer states that incision has no place in the treatment of anthrax. It is actually dangerous, as it breaks down the barrier zone, opens wide the blood and lymph streams, and fails to remove the focus.

Excision, at present the most commonly used method, has certain outstanding limitations and disadvantages. When the lesion is on the face or neck, the scarring is bad. If less than the entire area involved be excised, the objections applying to incision obtain. Since anthrax in man is primarily a local disease and usually remains such, any treatment which may tend to generalize the infection can scarcely be looked on as proper. The writer believes excision should be discarded.

Local dressings, local subcutaneous injections of oxygen, and symptomatic treatment may be useful adjuncts to a more specific method, but cannot be relied on alone.

The usefulness of powdered ipecac, arsphenamine, Extract of B. Pyocyaneus, and normal beef serum has not been clearly demonstrated.

Serum treatment is free from the objections raised against the previously cited methods, and the statistics quoted seem to show its superiority. Deaths among patients treated with it are not fairly blamable to the serum. It is accessible, and not extremely expensive. The writer's method of treatment follows:

At the beginning, a blood culture should always be taken, as it furnishes an index of the severity of the infection. While waiting for the result of the culture, treatment must be energetically pursued in all cases. In cases with little constitutional disturbance and a small well-circumscribed lesion, 50 c.c. of the serum should be given every eight to twelve hours, intravenously.—Local serum therapy every twelve to twenty-four hours.

Moderate cases require 50 to 80 c.c., intravenously, every eight hours, during the first twenty-four, and then according to progress. Local serum therapy, every twelve hours.

In severe cases which show negative blood cultures, either 40 c.c. every four hours, or 80 to 100 c.c. every six or eight hours, should be given intravenously, until the disease is controlled. Local serum treatment every six to eight hours.

If the blood culture be positive, 100 to 150 c.c. of the serum should be given intravenously every three or four hours, and so continued till the septicaemia is checked or the patient dies.

In internal anthrax, the treatment is the same as in septicaemia. In anthrax meningitis, the serum should be used intraspinally.

As the patients improve, the later doses of serum may be given intramuscularly or subcutaneously.

The technic of the local serum treatment is as follows: From two to three c.c. of the serum is injected at each of three or four points around the pustule. The needle is inserted into the red indurated border just beyond the blanched zone, the serum being directed toward the base of the eschar and injected so as to circumscribe the lesion. Commonly four to six injections suffice.

The writer has reported seven cases all terminating in recovery, though the lesion was on the face or neck. [C. H. L.]

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A NEW ENGLAND MEDICAL ASSOCIATION.

THE advances in medical knowledge which have stimulated the ambition of practitioners to keep informed of the progress made in all departments of study has led to the formation of societies embracing groups of people who may profitably assemble for conference. The American Medical Association has demonstrated in the largest way, the value of conventions by means of which the leaders in progress may reach the profession.

This great organization has found it necessary so to arrange its scientific program that groups of specialists may exchange opinions on the work done in their departments, but the material presented has been so voluminous that the average man finds himself somewhat perplexed in attempting to select the particular meeting which may provide him with the most valuable information. It has sometimes seemed that the vastness of the scope of these annual gatherings has detracted in a degree from the benefits to be derived through superficial comprehension of many diverse subjects, so that some who attend content themselves with hearing a limited number of scientific papers and spend a considerable time on social or other attractions.

To some extent, state society meetings are

sometimes criticized as having too much of a local flavor, and therefore may not draw so many members as might derive benefit.

Another plan has been found to be of great value, consisting of the association of those states which fall into a natural geographic group. This is illustrated by the Southern Medical Association, which is made up of Alabama, Arkansas, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, Missouri, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia and West Virginia. This Association has established a reputation for ideal medical meetings and large attendance. Its membership is about six thousand. Here in New England the natural advantages are ideal for the formation of an association of this kind. There are six states in close contact, with cities in each quite able to accommodate all who would attend meetings. It might be advisable for the *New England Surgical Society* to merge with the internists and general practitioners in the formation of a general association, for it is advantageous to bring representatives of all departments of medicine into discussions of subjects which have common problems.

The success attained by the *New England Surgical Society* may lead some to feel that a coalition might detract from the interest now shown, but where the line of demarcation in subjects to be presented is definite, the topics could be considered in sections, for a gathering of this kind would necessarily demand subdivisions.

There are so many matters relating to medical policies, public health and legislative activities concerning which there should be unanimity of opinion and concerted action, that meetings which bring the influential representatives of their states together would enhance the influence of the profession, add to the enjoyment of practice and ultimately meet the demands of the people in more uniformity of practice.

Another feature incident to a wider acquaintance is the satisfaction of being able to advise patients who are temporarily away from home as to a reliable practitioner in a given locality.

In addition to the advantages to be derived from the consideration of scientific matters, our common responsibilities to and interest in the American Medical Association should lead to the development of unanimity of opinion on the problems of this greater organization.

Definite constructive interest representing New England sentiment, would be welcomed by the A. M. A., and tend to dissipate the feeling that the more remote districts have little influence in shaping the policies of the Association.

The JOURNAL will welcome discussion on the advisability of forming a New England Medical Association.

NEWS ITEMS.

COMMITTEE ON RURAL HEALTH AND MEDICAL SERVICE.—The Committee on Rural Health and Medical Service met at the Boston Medical Library, Monday, December 19th, at 4 P.M. There were present: Dr. Walter B. Cannon, Chairman; Dr. E. H. Bigelow, of the Public Health Committee, Massachusetts Medical Society; Dr. E. H. Place, of Special Committee for Investigating "Rural Health Conditions"; Herbert C. Parsons, of the Mental Hygiene Society; Mr. Plaisted, of the State Department of Agriculture, and Mr. Moyer, State Agent, Extension Education Service. The Chairman reported as to conference with committee of like purpose, of which Dr. Homer Gage is Chairman, and of there being a mutual recognition and agreement that some "survey of state conditions is needed, to learn facts and what can be done to better the situation." "It was agreed, further, that selected hospitals could be used to a larger extent, as teaching and diagnostic centres, and that extension courses in medical education could be arranged, knitting together the profession in city and country." A letter from Dr. Gage was read, giving more in detail the channels for extension of the service of the Society and emphasizing that all such activities belonged to its public health service. The Secretary reported on conferences here and in New York, with representatives of charitable and educational corporations and enterprises relative to assistance in such general extension. Dr. Bigelow expressed the belief that the State Medical Society was equal to the task of assuming these larger obligations and opportunities. The committee further expressed its interest in such an enlargement of the Society's activities, and with such assumption, it was voted this independent committee would cease to function. Meeting adjourned.

PAUL W. GOLDSBURY, *Secretary.*

REPORT OF MEETING OF STAFF OF BOSTON DISPENSARY.—The December meeting of the Medical Staff of the Boston Dispensary was held in the General Admission Rooms of the Medical Department, on Friday, December 16th, at luncheon.

Dr. Maynard Ladd and associates, Dr. Elmer W. Barron, Dr. Allan R. Cunningham, and Harold A. Gale, of the Pediatrics Department, gave a clinical program, demonstrating with cases from the Out-Patient Department and the Hospital for Children.

Dr. George Cheever Shattuck, Assistant Professor, Department of Tropical Diseases, at Harvard Medical School, at present in charge of a clinic at the Boston City Hospital, for the study and treatment of tropical diseases, gave an interesting talk concerning his work on Tropical Diseases.

NOTES FROM DISTRICT SOCIETIES.

WORCESTER DISTRICT MEDICAL SOCIETY.—Dr. Frank T. Oberg, Worcester, son of Mrs. Carl Oberg, and Miss Ester Eckstrom, daughter of Rev. and Mrs. John T. Eckstrom, of Worcester, were married November 30, 1921. Dr. Oberg, who has been assistant obstetrician at the Worcester City Hospital, has removed to Hutchinson, Kansas, where he has an appointment as obstetrician to the Gage-Hunt Clinic.

At the regular clinical meeting of the Staff at Worcester City Hospital, held December 16, 1921, Dr. George M. Albee gave a report of a study of the action of quinidine in five cases of auricular fibrillation. Dr. Gilbert W. Haigh demonstrated the diagnostic value of inflation of the colon and read the report of a case of trichinosis. Dr. Ralph Ellis reported two unusual cases of carcinoma of the stomach.

DORCHESTER MEDICAL SOCIETY.—A meeting of the Dorchester Medical Society was held on December 21, 1921, at the Municipal Building, Columbia Road, Dorchester. Dr. William C. Emery presided. Dr. John Adams was the speaker of the evening. The subject of his discourse was "Backache." Several lantern slides added to the interest of the talk, and the large gathering gave Dr. Adams a unanimous vote of thanks for his most entertaining and instructive hour. A very homelike collation topped off the session.

JOSEPH I. GROVER, M.D.,

Correspondent for the Norfolk District.

Miscellany.

COMMITTEE ON LEGISLATION.

THE MASSACHUSETTS MEDICAL SOCIETY.

THE call for the meeting of the Joint Committee on State and National Legislation presented so many matters of interest that it is herewith reproduced. The profession should study these questions in order to aid the Committee on Legislation.

The second meeting of the Auxiliary Members with the Joint Committee on State and National Legislation will be held at the Boston Medical Library, Wednesday, December 28, at 4 o'clock.

Matters of moment in the legislative programme are coming up for discussion, and it is earnestly hoped that you will make a special effort to be present. The first meeting, held on December 9th, was an important and interesting one, and an abstract of the free discussion of various questions considered at that time will be sent you shortly.

PROBABLE TOPICS FOR DECEMBER 28TH.

1. *The Sheppard-Towner bill* simply awaits acceptance by the State and the award of funds to become operative. The Massachusetts Department of Public Health has asked the aid and advice of every physician in the State in formulating a programme and carrying it out successfully. It is worthy of note that, up to the present time, the provisions of the bill directed toward maternal welfare have attracted far more attention than its important aim in the promotion of infant well-being.

2. *The Midwife.* Last year, a bill was introduced to license midwives. This year, a similar bill is already in preparation. It will provide for the examination and registration by the Board of Registration in Medicine of qualified graduates of any approved school for midwives which gives a course of not less than six months. Midwives already established, if properly qualified, will be given due consideration.

No operative work will be countenanced.

Registration lists are to be kept by city and town clerks.

This bill embodies the views of those who favor the recognition and regulation of midwives, the aim being gradually to improve their quality.

The opponents of registration feel that as time goes on the midwives will be steadily eliminated. They trust to popular education and a gradual conformation to American customs. They regard it as unwise to stamp with official approval those women who after a brief course undertake this very important branch of nursing.

The present laws permit the prosecution of midwives for illegal acts. Even under a registration law it would appear to be impossible to keep a check upon unauthorized, ignorant women acting as assistants in a friendly and neighborly way in uncomplicated deliveries.

What position shall the Committee take? There are at present, probably, about five hundred midwives practicing in the State, of whom about three hundred are in Boston and Greater Boston.

3. *Medical and Premedical Education.* The Board of Registration in Medicine has been given the power to conduct, for candidates, practical clinical examinations, utilizing for this purpose hospital patients. This step forward will help to eliminate those whose medical knowledge has been gleaned chiefly from quiz compends.

This year the Board will again advocate two years of college training or its equivalent, as a required preliminary to the study of medicine. The need of this training to fit one to undertake the study of medicine today is plain. It

is absolutely unfair to permit any unqualified student to start out upon a course which he is unfitted to pursue. And it is likewise unfair to permit any institution to lure students to an inadequate training for their life work.

The Board of Registration in Medicine also proposes another bill which will permit the registration of medical students for the limited practice of medicine under the supervision of instructors. This bill is necessary in order to enable the continuance of certain phases of clinical instruction carried on with students who are themselves not qualified by law to act as physicians while at the same time registered physicians are forbidden to associate with them in the conduct of a case.

4. *Chiropractic.* It is likely that, this year, a concentrated effort will be made to establish a special chiropractic board for the examination and registration of chiropractors. The present law provides that the practice of osteopathy is the practice of medicine. There is no reason to suppose that the same ruling would not be applied to chiropractic.

If the practice of osteopathy and the practice of chiropractic are both to be classed as the practice of medicine in its larger sense, does it not inevitably follow that all applicants for license to practice these cults must show their fitness to qualify for registration in the practice of medicine? The State has taken no steps to dictate methods of practice, but in standards of fitness it is, and should remain, inexorable.

5. *Vaccination.* For several years, the Joint Committee has advocated the extension to private schools for the compulsory vaccination regulation which now applies only to public schools, and they have also sought to correct the notorious abuse by misguided individuals of the privileges attaching to the issuance of certificates of physical unfitness for vaccination. In the face of the fanatical zeal of those opposing vaccination, much work must be done to bring before the public the true facts regarding vaccination and smallpox.

6. *Vivisection.* There has been held in Boston recently an interstate conference of those opposed to vivisection. Last year they sought to forbid the use of dogs for animal experimentation. Their aim unquestionably is to prevent the use of any animals in the aid of medical science regardless of the effects upon medical progress and regardless of the necessary withdrawal from use of remedies of such established value as, for example, diphtheria antitoxin.

There is every indication that their onslaught on the Legislature this year will be greater than for several years past. There seems to be a very definite relation between opposition to animal experimentation and a disregard for a truthful statement of facts. Moreover, some of

the followers of certain cults seem inclined, in their opposition to scientific medicine, to join forces with the anti-vivisectionists.

7. *The Training of Nurses and Attendants.* The resolutions passed by the New England Surgical Society about fifteen months ago, and the article by Dr. Mayo on the nursing situation today, have brought to the front the failure of our training schools to supply, up to the present time, the demand for nurses who will take care of sick people, especially sick people of moderate means. Of course, present economic conditions are bringing more applicants to our training schools. Training schools for attendants are being established. Conditions will improve slowly under purely economic forces. But today, numerous questions are being asked:

Has the Board of Registration for Nurses gone too far in its requirements?

Is there any practical way in which the training of nurses can be graded according to the type of work which they intend to undertake?

Is the training of attendants, and their recognition by the State, the answer to the problem?

Will the training of attendants carry us back to the conditions existing in the early days of the training of nurses?

If we can secure a simplification of the nurses' training without lowering professional standards, much will be accomplished.

Legislation may be proposed.

Can we assume any leadership in the matter?

Yours very truly,

J. W. BARTOL, *Chairman.*

A NEW ENGLAND HOSPITAL ASSOCIATION.

A MEETING of New England Hospital Executives was held at the Boston Medical Library on December 7, 1921, to consider the formation of a New England Hospital Association. The meeting was called to order by Dr. John M. Peters of the Rhode Island Hospital, Providence. There was an attendance of 93, representatives being present from all of the New England States.

Dr. A. R. Warner, Executive Secretary of the American Hospital Association, addressed the meeting, explaining the plan of geographical sections as developed by the American Hospital Association. He proposed that the formation of a New England Hospital Association be considered in the light of the following principles:

1st. That there be strictly common basic viewpoints and interests in the emphasized activities, and no real conflicts in any activity of the organization.

2nd. That the organization fill a definite need not within the legitimate scope of any other organization and promptly develop positive usefulness.

3rd. That the plan shall, in advance, convince all of the groups it aims to unite, that the organization will properly represent and promote their views and their interests.

Because of the greater number of hospitals in Massachusetts, together with the centrally located situation as regards the rest of New England, Dr. Warner felt that the Massachusetts representation would quickly overshadow, out-vote, and control the activities of such a New England Hospital Association, to such an extent as "eventually to leave a New England Hospital Association in name and a Massachusetts Association in fact." He submitted the following plan:

Each New England State should form a state hospital association, to become a separate association and, as soon as fully organized, become a separate geographical section of the American.

There should be formed a correlating and central body known, perhaps, as the New England Hospital Council, formed by two or three delegates from each state association to correlate and promote the organized hospital activities of all the New England States; also to represent and to transact such business for each and all of the Associations as shall be delegated to it. The Council should elect its own chairman.

A joint annual meeting of the Associations of all the New England States should be held somewhere in New England, under the auspices of one of the state associations. The officers of this association should prepare the program and preside over the general sessions. This meeting would be known as the Annual Convention of the New England Hospital Associations.

The time and place of each Annual Convention and the selection of the Association to assume responsibility therefor should be determined by the Council. Any expense of the meeting could be assessed by the Council on the Associations in proportion to their membership.

At each Annual Convention there should be separate meetings of each Association under its own officers, to discuss satisfactorily the specific problems of each state, as well as joint sessions for the discussion of topics of common interest and bearing.

This plan of organization would not only avoid all the difficulties of the other, but give additional advantages. The principal object of the Association would be assured a greater success. More people would be attracted to the Annual Convention, especially from states other than Massachusetts.

The plan submitted by Dr. Warner was thoroughly discussed by the members present.

Dr. Sexton, former President of the Connecticut State Hospital Association, gave a short review of the reasons for the formation of the Connecticut Hospital Association, and some of its accomplishments in the legislative field.

The Association was able to bring about the passage of a bill making it necessary for a patient leaving a hospital to satisfactorily adjust his hospital account before leaving. This bill being drawn upon the same principle as the legislation previously passed to prevent the jumping of hotel bills.

The second bill passed, as the result of the Association activities, was one making Workmen's Compensation Insurance Companies pay the full cost of the board of patients. Previously, the insurance companies had been charged at the regular rate charged to charity patients, which rate was usually lower than the actual cost of caring for such patients.

Representatives from the various states were called upon to express their opinion regarding the advantages of the formation of a New England Hospital Association as compared with the advantages of the formation of separate state associations. Speakers from Maine, New Hampshire and Rhode Island stated that in their opinion it was doubtful if any state organization could be formed in these states.

Mr. George T. Chaffee, of Vermont, announced that the Vermont Hospitals had already completed the formation of a State Association which, he thought, they would not wish to give up. As to the reception of the New England Hospital Association in Vermont, he was unable to say.

It was finally voted, "That this body is in favor of forming a New England Hospital Association and that it be affiliated with the American Hospital Association as a geographical section."

The Chair was then authorized to appoint a committee to bring in recommendations for a Constitution and By-Laws, and a Nominating Committee.

The meeting was then adjourned. Luncheon was served on the first floor of the Medical Library, and a very pleasant hour was spent in renewing associations with old acquaintances and making new ones.

In the afternoon meeting, the Constitution and By-Laws submitted were read and accepted. The following officers were elected:

For President, Dr. Joseph B. Howland, Peter Bent Brigham Hospital, Boston, Mass.

For Vice-President, Miss Rachael G. Metcalfe, R.N., Central Maine General Hospital, Lewiston, Maine.

For Treasurer, Dr. Nathaniel W. Faxon, Massachusetts General Hospital, Boston, Mass.

For Trustee for four years, Dr. John M. Peters, Rhode Island Hospital, Providence, R. I.

For Trustee for three years, Dr. Louis A. Sexton, Hartford Hospital, Hartford, Conn.

Trustee for two years, Miss Ida F. Shepard, R.N., Mary Hitchcock Memorial Hospital, Hanover, N. H.

For Trustee for one year, Dr. Thomas S. Brown, Mary Fletcher Hospital, Burlington, Vt.

Application has been made to the American Hospital Association for admission as a geographical section.

Obituary.

LUCY E. WETHERBEE-ROCKWELL, M.D.

DR. LUCY WETHERBEE-ROCKWELL, the wife of Dr. A. E. P. Rockwell, of Worcester, died there December 18, 1921, at the age of 45. She was born in Boston, but was a resident of Worcester for most of her professional and private life. She was graduated from the Boston University School of Medicine in 1899, taking the highest rank in scholarship in a class of exceptional ability.

For a year and a half she was house physician at the Massachusetts Homoeopathic Hospital, and in 1902 established herself as a general practitioner in Worcester, joining the Massachusetts Medical Society ten years later. In 1915, she married Dr. Rockwell, who was one of her classmates in the medical school. During her professional life, Dr. Wetherbee-Rockwell had been at various times president of the Worcester College Club, and had also been secretary of the Hahnemann Hospital Association.

She is survived by her husband and by a sister, Mrs. Kenneth L. Marks, who is assistant professor of chemistry at Simmons College.

Correspondence.

THE PRACTICE OF MEDICINE BY NURSES.

Shelburne Falls, Mass., Dec. 16, 1921.

Mr. Editor:—

The issue of December 15th has just reached me and I was dumfounded to read your article under the heading of The Practice of Medicine by Nurses. The statements are as erroneous as they possibly could be.

Without any question of a doubt, I am one of the doctors your article refers to.

If that is the case, I challenge the statement, evidently originating from the District Attorney, that the doctors were invited to appear before the grand jury, but did not appear. The fact of the matter is that I, personally, did not know that there was such a thing going on as a grand jury investigation, or any other investigation, until the thing was all over, and even then one of my patients told me that

Dr. — had had the nurse up before the grand jury and had lost the case.

I was surprised to hear that the case had been before the grand jury at all, as it seemed to me that the grand jury was a queer place to refer a purely civil case.

Until I read your article this morning I was under the impression that the doctor in question had taken direct action against the nurse without referring the case to the Board of Registration in Medicine for investigation and action.

The fact of the case in general is as follows: When Miss — came to Charlemont last May, she called on me at my branch office there. I told her that I was glad to see her, and would assist her; at the same time I told her that I was afraid that her object in coming was not wholly for nursing purposes. Miss — stated that she was there to do teaching and nursing and that she had no intention of practicing medicine. About two days after, she attended a man in the village who had been mauled and tramped upon by his horse, with lacerations of head and body. No doctor was called. Although a straight head injury case, Miss — attended the case right through for several days without medical examination or assistance. I call that practicing surgery, maybe I am wrong. A few days after, the same nurse attended a case running a high temperature. She watched the case for two days and then I was called in. Laxatives were advised by her in the meantime. I call that practicing medicine.

A short while after, the nurse asked me to see another case. Abdominal pain very acute, high temperature. She had prescribed a good dose of castor oil. I went over immediately to see the case and diagnosed acute appendicitis. Sent the case in for immediate operation. Diagnosis was confirmed. I do not suppose you would call that practicing, would you? Another case, a few days later:

Woman had been confined by local physician but he went out of town for a few days. Family called me in in his absence, as they were afraid that the stump of the umbilicus was infected. I went to see the case and it looked not at all promising. I dressed the stump and went away, hoping for the best, but doubtful. Next day, I received a telephone call from the nurse saying that she thought she could handle the case herself, and she did. I do not suppose that that is practicing medicine and surgery, either.

Another case: I was called to see a patient. I made a diagnosis of acute bronchitis, gave him instructions and left necessary medicine. The next day the nurse went in and evidently stated that she would attend the case and I could furnish the medicine as a druggist.

Some bad sore throat cases attended, till she got scared, then sent for me. Case of chicken-pox diagnosed and attended by the nurse. No doctor called, other child advised to attend school for ten days, as there was no danger to the other children for that time. The mother took the same disease, and I was called in. Nurse gave the usual instructions and prescribed or advised, whatever you want to call it, the use of laxatives.

These cases are only a few typical cases, and the information that I have given above is as given to me by the mothers, patients and the nurse herself. She has been very busy right along, and I have no doubt that she has attended hundreds of similar cases, during the time that she has been in the community that I know nothing about.

I protested to the nurse that she was taking these cases away from us. She admitted that she had done wrong, but went right on doing the work.

I then erroneously wrote to the Medical Association, thinking that that Association was in control of cases of illegal practice, or, I should say, practicing without a license. The reply I received appeared to

me to suggest a didn't-give-a — attitude, but finally from the last counter-battery bombardment, I learned that the Association was not interested in that side of practice; but after that the Board of Registration in Medicine looked after that work.

I dropped out of the controversy from that time on until the chicken-pox case came up, and the same day I went in to see a patient of mine that I had confined a few weeks before, to make a final post-partum visit. I found the baby weighed about half a pound less than at birth. I told the mother that the child was not doing well and should have care. She told me that the nurse was attending the baby and prescribing Mellin's Food.

Those two cases sort of got on my nerves and I wrote in to the Board of Registration, reporting these cases, and asked for action. I thought the thing over and decided to drop the charge, let the people have the nurse, give her a chance to paddle over the roads this winter at her heart's content, so I closed my office at that place, also the controversy.

All summer Miss — has been using her Red Cross car to transport cases to all points away from the local physicians, and not only that, but the outside men, knowing fully the difficulties we were having, greedily accepted the cases she transported to them.

To get a physician for the school, the board, presumably due to the influence of the nurse, went nine miles away and got a recent comer to accept the school work.

The Superintendent of Schools came to me one day early in November and asked me if I would take the school work. I told him I would, but I would prefer to have the resident man have the place, as I considered he had a greater right to it.

At the beginning of the school term, the place had been given to a lady physician from some state department in Boston, but she had resigned or left the state. That appointment, I understand, was at the suggestion of the nurse as well.

When the young fellow from the neighboring town accepted the school place, I considered that the gentlemanly thing for him to do—which he did not do—was to open up an office there and look after the people and, incidentally, climb the hills through the district, and I gave him every chance to do the work by closing my office and handing over what work the nurse had left us.

The district has only a comparatively small practice at best. The nurse goes, for fifty cents a call, anywhere. Her car, repairs, oil, gasoline and general expenses are all paid by the Red Cross.

She is a good, clever, capable nurse, and she can do, and do well, a lot of the minor work, and some of the major work, and get away with it. How, in a small community, with much competition,—fifty-cent charges, everything paid for,—how anyone with a grain of intelligence can expect physicians to have the least show to compete, is more than I can fathom.

I had the district practice, that is, what was left over, after the nurse had attended her cases and transported what she could to outside practitioners, but as a protest, I closed my office there.

Anyone with a grain of sand would have done it long before. It was an inopportune time to do it, as I realized a few days later, when I heard about the matter having been brought up before the grand jury, as it threw suspicion on me that I had been co-operating, in what I have up till now supposed to be a private suit, brought against the nurse by the local or resident physician.

Public opinion is with the nurse. I suppose she is a sort of martyr (Joan of Arc) leading on with the Red Cross flag waving to the breeze.

Public opinion will be with anyone who cuts down medical fees in this district. Anyone, even the Old Nick himself, would be a popular hero who would go around practicing all over the country for fifty cents and furnishing bandages, drugs, and everything.

They say every action has its reaction, and I guess it is so. How any physician can go into that district, if he has any degree of good judgment, now, or at any time, is, or will be, beyond my ken.

I should have thought, Mr. Editor, that you would have been cautious enough to have made more thorough inquiries before printing that article.

Although no names are mentioned, the article is so broad that there can be no mistaking who you referred to. Why you should take such an attitude against a fellow practitioner, with the highest possible credentials, highest daily ethics, whose only professional error is that he realizes that he must have a fee, and that there is a business side to the practice of medicine,—one who has never refused a professional call that had the least grain of a claim on services, tumbling out over the roads in all sorts of weather when others declined the calls,—without referring the accusations to the party accused, seems to me to not be doing the right thing.

It is all very well for those entrenched—as you probably are—with a salary from the State, possibly the accumulations of years of practice and a large following, to criticize erroneously, and do so with impunity.

Fortunately, my shoulders are broad, and I guess I can weather the storm, but please, Mr. Editor, in the future, do you not think if the part of discretion and valor to make sure you are right before using the editorial columns of the JOURNAL, the way you have in this case?

It seems to me that I have given you sufficient information from personal knowledge, and as given to me by patients, to investigate the conditions in the district in question. I am prepared to give names and dates of the above cases. The question is, what is the use of a university education, state examination and state license, if anyone—good, bad or indifferent—can practice without such things?

Personally, I hope things will be allowed to go on. So far as I am concerned, the damage is done already, practice, for the time being, dented badly, your article winging its way along to get in its work.

Never mind, Mr. Editor, the reaction will come some day, surely, and in the meantime let us get on with the good work. I hope the next criticism will be constructive.

Faternally,

Yours very truly,

W. A. HUTTON.

[Comment: A letter of this character warrants a direct reply—

First. The statements quoted are those made by a public official.

Second. The Editor did not know that the writer of the above letter was the one referred to.

Third. Any challenge to the District Attorney is respectfully referred to him.

Fourth. All investigations or prosecutions of the illegal practice of medicine come under the police power of the state and are criminal, and not civil, actions.

Fifth. Complaints of illegal practice should be made to local police first. When made to Board of Registration in Medicine, under advice of the Attorney General, they are referred to the police departments or the State Department of Public Safety.

Sixth. The matter cannot be dropped. The assertion that there was evidence of the practice of medicine by a nurse will be again referred to the proper authorities. The criticisms of the Editor are not vital to the questions involved. Readers who are interested are respectfully referred to the editorials on the subject, which definitely argue that nurses should not practise medicine and that physicians should be protected.

EDITOR.]

INDEX OF VOL. 185.

A complete Index of the JOURNAL from July to December, 1921, is being prepared and will be mailed later to every subscriber.

Index to Vol. 185 can be secured at the JOURNAL office by those who wish to have their JOURNALS bound.

REGISTRATION EXAMINATION.

The result of the November examination of physicians applying for registration in Massachusetts, are as follows:

| NAME OF SCHOOL GRANTING DEGREE | NUMBERS EXAMINED | NUMBERS REREGISTERED | NUMBERS REJECTED |
|-------------------------------------|------------------|----------------------|------------------|
| Tufts | 7 | 7 | |
| American School of Osteopathy | 1 | | 1 |
| Mass. Coll. of Osteopathy | 2 | 2 | |
| Coll. Phy. and Surg., Boston | 3 | 1 | 2 |
| Middlesex Coll. Med. and Surg. | 8 | 5 | 3 |
| Univ. St. Vladimir | 1 | 1 | |
| Laval | 1 | | 1 |
| Harvard | 5 | 5 | |
| Imperial Ottoman Constantinople .. | 1 | | 1 |
| Univ. of Maryland Med. School | | | 1 |
| and Coll. Phy and Surg. | 1 | | 1 |
| Kentucky School of Medicine .. | 1 | | 1 |
| Vanderbilt University | 1 | 1 | |
| Univ. of Pennsylvania | 1 | 1 | |
| Stanford University | 1 | 1 | |
| St. Louis Coll. Phy. and Surg. | 1 | 1 | |
| Loyola University | 1 | 1 | |
| Marquette Med. College | 1 | 1 | |
| University of Vermont | 1 | 1 | |
| University of Geneva | 1 | | 1 |
| Boston Univ. School of Medicine .. | 1 | 1 | |
| Medico-Chirurgical, Pa. | 1 | | 1 |
| Hahnemann, Pa. | 1 | 1 | |
| | 42 | 30 | 12 |

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1921—1922

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